January 2, 1957
Re: DMEA 4462
Lisbon Valley Uranium Company
Silver Plume mines
Clear Creek County, Colorado
$110,520.00 - Lead-zinc

EXTRA COPY
D M E A

RECEIVED JAN 4 1957

		CODE

Memorandum

To: F. E. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance on a six-part project consisting of rehabilitation of parts of old mines, searching from deep workings for downward extensions of ore shoots that were old time producers of lead, zinc, and silver in higher levels, and diamond drilling for possible parallel veins.

The examiners, in a well prepared report, analyze the six projects and conclude some of the proposed work is poorly planned and little or none of it can be justified by available geologic and engineering data, data not considered or, if considered, disregarded by the applicant.

The applicant has done some preparatory work and apparently contemplates doing more. The examiners and the Field Team recommend that the application be denied without prejudice.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Chron. file
C. M. Bishop, 3617
NENelson:pbb
G: 1/2/57

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

EXTRA COPY DMEA RECEIVED JAN 8 1957		
DATE	INITIALS	CODE

January 7, 1957

Re: DMEA 4462; Lead-Zinc;
$110,520.00
Lisbon Valley Uranium Co.,
Dives-Pelican Mine
Clear Creek County, Colo.

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, Branch of Base Metals

Subject: Review of Field Team report dated December 18, 1956 and received December 28, 1956 on subject application.

The applicants propose to rehabilitate the Burleigh and Diamond tunnel levels, dewater the Ricci winze and drift and core drill to explore downward or lateral projections of reported ore bodies.

The field examiners Richter (USGS) and Buel (USBM) found that the merit of the proposals could not be checked adequately because access to many critical sections was blocked by caved or flooded areas. Where access could be had or reliable information was available the examiners concluded the geologic and engineering evidence pointed to basic unsoundness in the program of exploration outlined by applicant. In an unusually well stated analysis (pp. 14-19) they review all elements of the exploration program pointing serious errors of fact or conclusion which indicate the proposed work is unsound and should be denied without prejudice.

I concur with the views expressed by the field examiners and the Field Team.

O. M. Bishop

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 12/21/56

REFERRED TO:

DMEA-4462

1. Mr. Griswold
2.
3.
4.

FOR:

- ____ Action
- ____ Approval
- ____ Comment
- ____ Conference
- ____ Consideration
- ____ Filing
- ____ Instructions
- ____ Investigation
- ____ Initials
- ____ Mailing
- ____ Previous correspondence
- ____ Recommendation
- ____ Record of ____
- ____ Referring to ____
- ____ Reply for signature of ____
- ____ Rewriting
- ____ Signature
- ____ Suggestions
- ____ Your information

REMARKS: Field Exam. Report
For Agenda 12/26/56

Check (X) before the items needing attention.

George C. Selfridge
Initials of sender.

GPO 16—63815-1

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

224 New Customhouse
Denver 2, Colorado

December 18, 1956

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Joint Report of Examination Docket DMEA 4462 (lead-zinc)
Lisbon Valley Uranium Company (Dives-Pelican Mine)
Clear Creek County, Colorado

Enclosed are the original and three copies of a joint engineering and geologic Report of Examination on the subject property.

The examiners conclude that the program proposed by the Applicant is ill-conceived and, in general, not founded on geologic facts. Because of caved, or flooded workings, the examiners were unable to obtain more data on the probable significance of the targets; most of which, consist of a downward or lateral extension of reported ore bodies. Therefore, they were unable at this time to amend the program proposed by the Applicant. They recommend that the application be denied without prejudice, based on the possibility that the Applicant will complete enough rehabilitation work to permit probable evaluation of potential targets which may exist in the mine. We concur in this recommendation.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures

HMC:ytl
cc
Sec. Op. Comm. (4)
Harshman)
Shaw)
Mining Division) w/ cc of
Docket 4462) Report of Exam.
Chron.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR

DEC 14 1956
REGION III
DENVER, COLORADO

DEC 24 1956
D.M.E.A.

December 13, 1956

TRANSMITTED
DEC 18 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw
E. N. Harshman

Subject: DMEA Docket 4462 (Lead-zinc), Lisbon Valley Uranium Company (Silver Plume mines), Clear Creek County, Colorado

Enclosed are the original and eight copies of a joint report by D. H. Richter, U. S. Geological Survey, and E. W. Buel, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes a program of drifting, crosscutting, and diamond drilling to explore for lead-zinc-silver ore on the Dives-Pelican and other mines in the Silver Plume area. The estimated total cost of the project is $110,520.

The examiners conclude that the program proposed by the applicant is ill conceived and in general not founded on known geologic facts. A good example of the lack of intelligent planning on the part of the applicant is his "Project No. 2" which proposes to explore for ore on the Burleigh level. The proposed target is 1,350 feet vertically below an ore shoot on the Dives-Pelican vein - a vein which dips an average of about 65° to the northeast (away from the point of origin for the proposed crosscut).

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

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DEC 31 1956
D.M.E.A.

Because of caved or flooded workings, the examiners were unable to collect data on the probable significance of the targets most of which consist of the downward or lateral extension of reported ore bodies. They were thus unable to amend the poor program proposed by the applicant.

Considerable data were available to the examiners in the form of U. S. Bureau of Mines and U. S. Geological Survey reports. Based on these data the examiners conclude the targets the applicant proposes to explore are poor, or have already been explored.

The examiners recommendation of denial without prejudice is based on a possibility that the applicant will complete enough rehabilitation work to permit an evaluation of potential targets which may exist in the mine. We concur with the conclusions and recommendations of the field examiners.

John F. Shaw
Supervising Mining Engineer

E. N. Harshman
Member, Field Team

Enclosures (9)
ENHarshman:mp

FOR UNITED STATES GOVERNMENT USE ONLY

TRANSMITTED

DEC 18 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

RECEIVED
DEC 21 1956

DMEA 4462

Lisbon Valley Uranium Company

Dives-Pelican mine

Clear Creek County, Colorado

Lead-zinc

Joint Engineering and Geological Report

by

D. H. Richter, Geologist
Geological Survey

E. W. Buel, Mining Engineer
Bureau of Mines

December 11, 1956

Reviewed by
DMEA OPERATING COMMITTEE

(date)

RECEIVED
MAR 31 1956

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3. Map showing project areas from the Burleigh tunnel level, Silver Plume mining district, Clear Creek County, Colorado. DMEA 4462	19

DMEA 4462

LISBON VALLEY URANIUM COMPANY
DIVES-PELICAN MINE
CLEAR CREEK COUNTY, COLORADO

RECEIVED
SEP 21 1956
DMEA

SUMMARY

Lisbon Valley Uranium Company, Denver, Colorado, on September 12, 1956, made application to the Defense Minerals Exploration Administration for aid in exploring for lead and zinc in the old Dives-Pelican and other contiguous mines. The estimated cost of the program is $110,520.

The property was examined on November 15, 1956, by an examining team from the U. S. Bureau of Mines and the U. S. Geological Survey.

The property consists of the consolidation of the Seven-Thirty, Bismarck, Dives-Pelican, Wisconsin, Corry City, and Dunkirk mines and other miscellaneous lands near the town of Silver Plume in Clear Creek County, Colorado. The mines are at elevations ranging between 9,000 and 10,500 feet and are easily accessible.

The Dives-Pelican lode was discovered in 1868, and between the years 1870 and 1901, the district was an important producer of lead, zinc, and silver. Mining was conducted intermittently up to 1914, but since that time relatively little work has been done. Most of the mine workings are now inaccessible, due both to caved ground

and flooded areas. During 1942-43 the U. S. Bureau of Mines in conjunction with the U. S. Geological Survey conducted a fairly extensive, but unrewarding, exploration program on the subject property.

The lead-zinc-silver ores occur as fissure filling and replacement-type deposits in Precambrian Silver Plume granite, the granite and biotite gneisses of the Precambrian Idaho Springs formation, and Tertiary acid intrusives. The veins occur in fault and shear zones whose courses have usually been determined by pre-existing Tertiary dikes. Sphalerite and argentiferous galena are the principal ore minerals.

The applicant's proposed exploration program, which consists of six projects, lacks adequate planning and is not based on sound geologic reasoning or engineering principles. The information available on the mines indicates that significant deposits of lead and zinc will not be discovered through the proposed program, and therefore it is recommended that DMEA assistance be denied.

INTRODUCTION

Lisbon Valley Uranium Company applied for DMEA assistance to explore for lead-zinc ores on property consisting of the Seven-Thirty, Bismarck, Dives-Pelican, Wisconsin, Corry City, and Dunkirk

mines and the Burleigh and Diamond tunnels. The applicant's estimated cost of DMEA assistance is $110,520, of which the Government's share at 50 percent is $55,260.

An examination was made of the property on November 15, 1956, by a DMEA examining team composed of Donald H. Richter, U. S. Geological Survey, and Edward W. Buel, U. S. Bureau of Mines. The team was accompanied by James M. Knowles, chairman of the board of directors of the subject company.

Most of the mine workings are inaccessible; however, it was possible to enter parts of the Burleigh and Diamond tunnel levels from which the applicant proposes to do his exploratory work. With the exception of the areas referred to by the applicant as "Project No. 2," the remainder of the applicant's "Project" areas could not be adequately examined because of caved and flooded ground.

The property has been investigated on several occasions by members of the U. S. Bureau of Mines and U. S. Geological Survey. Upon their recommendations, the Government conducted two exploration programs. One was the Bureau of Mines Project 1561 from September 1942 to February 1944, the other, a DMEA project under contract I-DMA-E 37, from June 1951 to January 1954.

Because of the complex vein system, especially in the Pelican-Dives mine, the names of the veins and/or mines is indiscriminately

used in Government publications. This makes it difficult, in some instances, to select production figures and/or other pertinent data for inclusion in this report, and much of the data cannot be specifically broken down and assigned to any individual mine.

LOCATION AND ACCESSIBILITY

The property is in secs. 13 and 14, T. 4 S., R. 75 W., 6th P.M., Silver Plume mining district, Clear Creek County, Colorado (fig. 1). It is on the north side of Clear Creek canyon, adjacent to the town of Silver Plume, on U. S. Highway 6 (fig. 2). Silver Plume is approximately 50 miles west of Denver.

All of the mines included within the property can be reached readily from Silver Plume by way of short steep mountainous roads, some of which are kept in serviceable condition throughout most of the year.

GEOGRAPHY

The topography of the district is one of pronounced relief - precipitous peaks, narrow valleys, and steep V-shaped canyons. The altitude ranges from approximately 9,100 feet at Silver Plume, to over 12,300 feet atop Republican Mountain less than 2 miles north of Silver Plume.

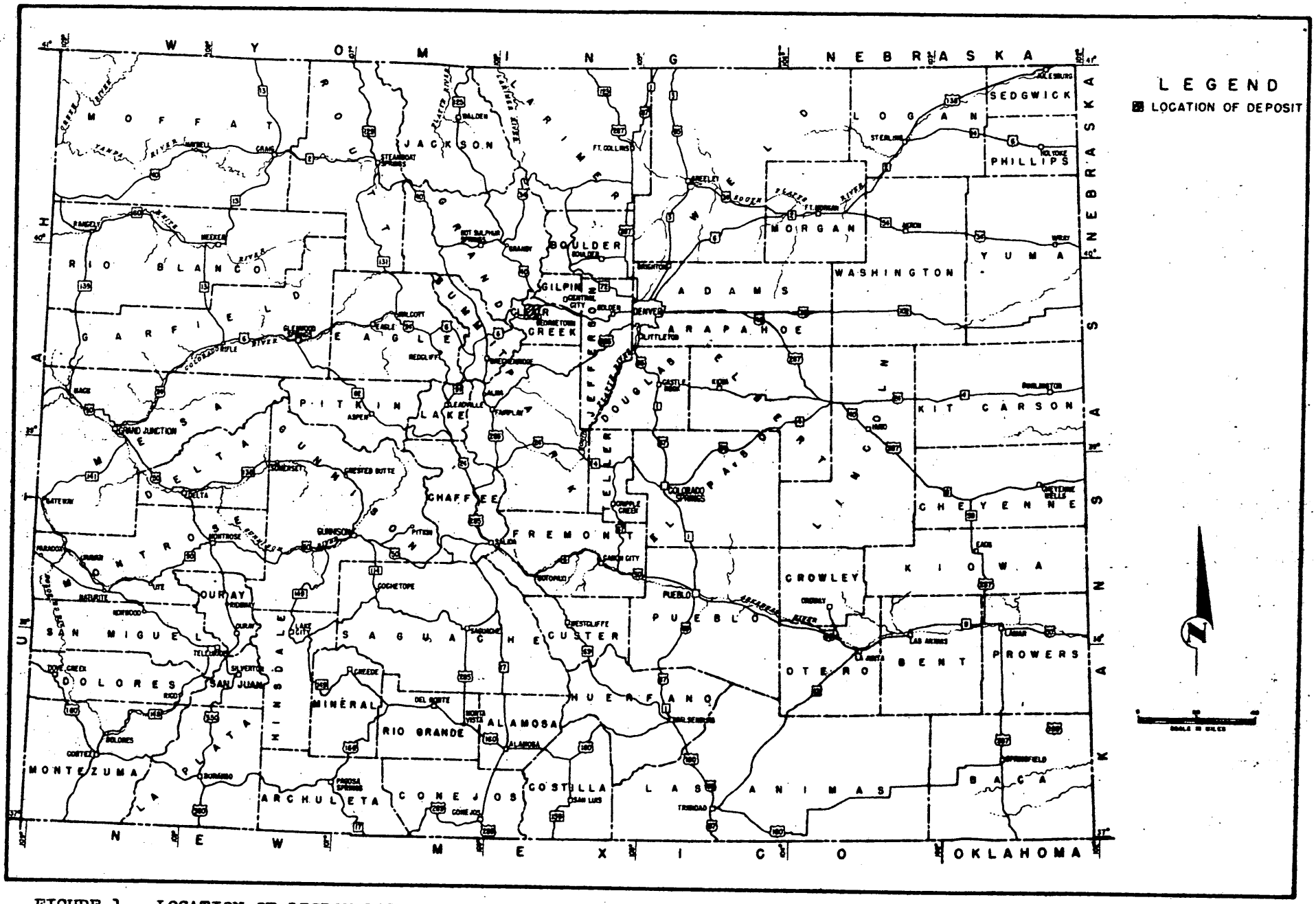

FIGURE 1 - LOCATION OF LISBON-VALLEY URANIUM PROPERTY, CLEAR CKEEK COUNTY, COLORADO. DMEA 4462

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The mining district is drained by Brown, Cherokee, and Snowdrift Gulches, which lead into Clear Creek canyon. Water for mining is plentiful.

Vegetation consists chiefly of scattered spruce, pine, fir, and aspen. Timber-line is approximately at 11,000 feet. Much of the mine timber can be obtained from sawmills within the general region.

The climate is one of moderately warm summers, and winters that are not considered severe. Annual precipitation does not amount to much more than 20 inches at Silver Plume. The greatest precipitation results from thunderstorms which occur almost daily from April to August. The lower valleys are free of snow throughout much of the year, but the higher peaks are snow covered from fall to spring. Except for occasional snowstorms which may disrupt mining operations for several days, the principal mines can be operated the entire year.

Most mining supplies can be obtained in Georgetown or Idaho Springs, 2 and 12 miles, respectively, east of Silver Plume by highway. Adequate labor and housing are available at Silver Plume, as well as at Georgetown, Idaho Springs, and other nearby communities.

The area is served by truck lines. The nearest railheads are at Denver and Climax, 50 miles east and 50 miles west, respectively of Silver Plume.

Electric power may be obtained from a line that passes over the property.

The applicant operates a concentrating mill at Silver Plume. Lead concentrates are shipped to the American Smelting & Refining smelter at Leadville, Colorado, approximately 64 miles by highway to the west. Zinc concentrates would probably be trucked to Denver and then shipped by rail to the A. S. & R. smelter at Amarillo, Texas.

PROPERTY

The property consists of the consolidation of the Seven-Thirty, Bismarck, Dives-Pelican, Wisconsin, Corry City, and Dunkirk mines, the Burleigh and Diamond tunnels, and other miscellaneous lands as described in the applicant's DMEA application. The property comprises an estimated, all or portions of, 114 patented lode claims, 10 unpatented lode claims, 1 patented placer claim, 6 patented mill sites, 8 tunnel sites, and miscellaneous lands and right-of-ways, and is owned by John A. Smith of Silver Plume, Colorado.

The applicant has a 20-year mining lease with an option to buy. The effective date of the lease is July 13, 1956.

HISTORY AND PRODUCTION

The first ore discovery in the Silver Plume mining district was made in June 1866. It was not until 1868, however, that the principal lode, the Pelican-Dives, was discovered. Soon after the major discovery, a number of lawsuits over mineral rights were instigated, which

prevented any significant ore production until 1870. Fierce quarrels and a continuation of suits and counter suits occurred up until March of 1880 when the Pelican and Dives properties were consolidated and controlled by the Pelican and Dives Mining Company. This company soon began to acquire neighboring mining properties - the Bismarck and Seven-Thirty mines, and others.

About 1938, the present owner, Mr. John A. Smith, became interested in several of the mines included within the property, and acquired title to them through tax sales and by outright purchases.

The greatest production occurred during the period 1870-1901. Since that time the mines have been worked intermittently on a minor scale. Relatively little work was done in the district after 1914.

A Preliminary War Minerals Report, prepared by the U. S. Bureau of Mines, states that the Silver Plume district's production prior to 1901 is estimated at 300,000 tons, and during the period of 1901-1937 was 492,614 tons, over half of which came from mine dumps, chiefly from those of the Dives-Pelican mine. Most of the earlier production was high-grade silver ore; lead-zinc ore, low in silver, was often left in the stopes.

PRESENT STATUS

The property has been extensively developed. The total amount of underground workings is estimated at several tens of miles. Most

of the workings above the Burleigh and Diamond tunnel levels are inaccessible principally because the caving of stoped areas.

At the time of the examination the Ricci (Phillips) winze was pumped out to nearly the 90-foot sub-level, which was partly filled with water. The condition of the 90-foot sub-level is not known, but is presumed to be open. It is reported that normally the Ricci winze is flooded to its collar. The Burleigh tunnel beyond the Phillips junction (fig. 3) would require a minor amount of rehabilitation in the form of laying track. The northeast extension of the Phillips drift is caved at approximately 172 feet beyond the Guenzi raise. Maps indicate that the Phillips drift extends 232 feet beyond the Guenzi raise and the area would require extensive retimbering. On the Diamond tunnel level, the Corry City northwest drift is accessible for about 380 feet from its junction with the Diamond tunnel; it is caved beyond this point. The amount of drift rehabilitation beyond the beginning of the caved area could not be determined.

The applicant is currently working on the property. As nearly as could be determined from the examination of the Burleigh and Diamond tunnel levels, the applicant's mining activities appear to be confined chiefly to rehabilitation and recovery of stope fill which is processed at the applicant's mill in Silver Plume.

GEOLOGY

The Dives-Pelican and other mines included in the subject property, well known producers of lead-zinc-silver from 1870 to about World War I, are in the Silver Plume mining district of Clear Creek County, Colorado. The area has been extensively studied by Spurr and Garrey 1/ and more recently by Lovering and Goddard 2/. Most of the workings in the mine are now inaccessible, due both to caved ground and water, and therefore in this report, only a brief general geologic outline is presented for the purpose of orientation. Detailed regional and local geology has been described by the above authorities.

Host rocks for the lead-zinc-silver veins in the district are: (1) a series of granite and biotite gneisses of the Precambrian Idaho Springs formation; (2) the Silver Plume granite, a Precambrian intrusive; and (3) Tertiary (?) acid porphyry dikes.

1/ Spurr, J. E., and Garrey, G. H., Economic geology of Georgetown Quadrangle, Colorado, U. S. G. S. Prof. Paper 63, 1908.

2/ Lovering T. S., and Goddard, E. N., Geology and ore deposits of the Front Range, Colorado, U. S. G. S. Prof. Paper 223, 1950.

The Dives-Pelican vein also known as the Pelican-Bismarck (northwest) and Dives-Dunkirk (southeast) is the main ore-bearing structure on the property. Two smaller structures - the Seven-Thirty and Wisconsin-Corry City veins - branch off this main system at the northwestern and southeastern ends respectively (fig. 2). The Dives-Pelican-Bismarck vein, which trends N. 60° W. and dips 50° to 90° NE, has formed along a strong fault zone, whose course was determined by a pre-existing dike of rhyolite porphyry. The Seven-Thirty and Wisconsin-Corry City veins also occur along zones of movement which are related to, but of lesser magnitude than, the break along the main Dives-Pelican-Bismarck system. The Philips vein occupies a fracture zone approximately 600 feet south of, and parallel to, the Seven-Thirty vein. This vein apparently does not intersect the Dives-Pelican-Bismarck vein, but is one of the many small subsidiary fractures, in part mineralized, that are so common in the area.

The veins are both fracture fillings and replacement-type deposits occurring sporadically along, and throughout, relatively wide brecciated fault zones. Furthermore, the ore on the veins tends to occur in definite shoots for which there is little or practically no known control. The main ore shoot on the Dives-Pelican-Bismarck vein occurs in the interval between the intersections of the Seven-Thirty and Wisconsin-Corry City veins, yet these two latter veins are essentially barren at

the intersection. The ore shoots on Seven-Thirty and Wisconsin-Corry City veins occur at least 500 feet from the intersection. As a general rule the hard and brittle Silver Plume granite and the Idaho Springs granite gneisses make more favorable host rocks for ore deposition than the relatively soft and easily sheared acid porphyries.

The principal sulfide minerals of the veins are sphalerite, argentiferous galena, and locally, considerable pyrite. Sulfides of silver are also present in minor amounts, especially in the upper levels. The chief gangue mineral is quartz with some barite, calcite, and siderite.

SAMPLING AND ORE ESTIMATES

The U. S. Bureau of Mines, in conjunction with its Project 1561, conducted extensive sampling in several of the mines included in the applicant's property. The results of the Bureau's sampling will be discussed in detail, especially for those areas proposed for exploration by the applicant (fig. 3).

Channel samples numbered 85 through 92, as given in the Bureau's unpublished Final Report - Silver Plume District - Project 1561, Appendix III, taken in the Ricci (Phillips) winze show the following weighted sample data:

Samples	Average width	Zn (Percent)	Pb (Percent)	Ag (Oz.)
86 to 92*	2.2 ft.	3.96	6.13	7.07

*Sample 85 excluded, as it was taken in gouge.

Sample 86 which was taken 15 feet below the collar of the winze gave the following results:

Width (feet)	Zn (Percent)	Pb (Percent)	Ag (Oz.)
1.5	9.3	16.9	16.0

It should be pointed out that sample 86 is nearby to what is thought to be the lower limits of an ore body that had been extensively stoped (now caved) above the Ricci winze area. Sample 86, therefore, is not representative of the vein as exposed in the Ricci winze and should be discounted in the assay computations. Excluding sample 86, the vein in the Ricci winze gives the following weighted sample data:

Samples	Average width	Zn (Percent)	Pb (Percent)	Ag (Oz.)
87 to 92	2.4 ft.	2.1	2.6	4.9

The Bismarck-Pelican vein, along which the applicant proposes to do 200 feet of drifting in the vicinity of the Guenzi raise, has been adequately sampled and diamond drilled by the Bureau of Mines. The results of the Bureau's sampling are as follows:

Samples	Average width	Zn (Percent)	Pb (Percent)	Ag (Oz.)
72, 73, 75, 77 to 83 (along drift)	3.7 ft.	3.8	3.7	4.4
67, 68 (at Guenzi raise)	not given	0.9	0.6	1.9
74 (35 ft. up raise)	1.0 ft.	0.4	2.4	8.2

The gold content in all samples is negligible.

Three Bureau of Mines diamond drill holes explored the Bismarck-Pelican vein in the vicinity of the Guenzi raise area. These holes tested the vein over an estimated linear distance of 300 feet and at depths ranging from 70 to 136 feet below the Burleigh tunnel level. Drill hole sample data for the more favorably mineralized portions are tabulated as follows:

Hole No.	Interval (feet) From	To	(Percent) Zn	Pb	Oz. Ag	Au
DD No. 1	309.3	312.5	1.4	0.1	1.2	0.01
DD No. 2	167.0	167.3	2.5	3.4	4.3	0.02
DD No. 3	128.8	130.8	0.4	0.005	0.5	Tr.

No sample data are available for the northwest drift of the Corry City vein on the Diamond tunnel level. During the field examination, a sample (EB-27) was cut across the vein at a point approximately 380 feet from the intersection of the Corry City northwest drift and Diamond tunnel (crosscut). The results of assays of this sample are as follows: 6.9 oz. of Ag, 0.5 percent Pb, 0.05 percent Zn.

A number of Bureau of Mines and miscellaneous reports give various ore estimate figures amounting to several hundred thousand tons of indicated and inferred ore reserves for mines within the Silver Plume mining district. Since the preparation of most of these reports, made during the World War II years, portions of some of the mines have been worked so that an estimate of present ore reserves is not possible. Furthermore, all of the ore reserves that have been estimated have been in workings far above the Burleigh and Diamond tunnel levels.

From an examination of the workings on the Burleigh and Diamond tunnel levels, it is believed that some marginal lead-zinc ore may exist as stope fill. An estimate of the possible ore reserves on the tunnel levels was not possible, principally because the ground was caved.

APPLICANT'S PROPOSAL AND DISCUSSION

The applicant proposes an exploration program consisting of six projects (fig. 3). We have carefully studied these projects, both in the field (to the extent mine conditions permitted) and in the office and find that all six are untenable because of (1) geology, (2) lack of adequate information, or (3) poor planning. The applicant's six projects, together with our appraisals of them are given below:

(1) "Dewater the Ricci winze which was sunk from the Burleigh tunnel level on the Phillips vein and drift southwest 500 feet along the Phillip vein on the 90 foot sublevel of the winze. Ore has been mined along the Phillip vein on and above the Burleigh tunnel level and there is ore in the bottom of the Phillip vein drift on the Burleigh level. The drift is now caved beyond the winze."

At the time of our examination the 90-foot sublevel of the Ricci winze was under 2 to 3 feet of water, making an inspection of the Phillips vein on the sublevel impossible. The Phillips vein along the Winze and Burleigh level drift is for the most part a 1- to 2-foot thick brecciated zone in granite gneiss and Silver Plume granite, containing very minor amounts of sphalerite. There is evidence that an ore body has been mined beyond the winze but, as the applicant states, the ground is caved and no inspection of the vein was possible. Furthermore, Bureau of Mines samples taken in the winze average only 4.9 oz. of Ag, 2.6 percent Pb, and 2.1 percent Zn over a 2.4-foot length. Therefore, on the basis of our limited field examination and information, we cannot recommend further exploration along the Phillips vein.

(2) "Drive the Burleigh tunnel 300 feet [in a] northwesterly direction from the present main tunnel face. The purpose of this is to cut under the mineralized zone which produced abundance of ore on the Hercules tunnel level."

This proposed project is solely the outcome of poor planning. The Burleigh tunnel is at an elevation of 9,150 feet. The main ore shoot, on the Hercules level of the Pelican-Bismarck vein, which the

applicant proposes to crosscut under is at an elevation of 10,500 feet, or 1,350 feet above the proposed work! Furthermore, since the dip of the Pelican-Bismarck vein ranges between 50° and 80° to the northeast, the proposed crosscut on the Burleigh level if continued along its present course, would have to be driven at least 1,500 feet to intersect the vein. In fact, the closest the proposed crosscut on the Burleigh level would be to the Pelican-Bismarck vein is about 800 feet, measured in a northeast direction, normal to the strike of the vein. Certainly the basis for this work is without merit and unfounded.

> (3) "Retimber the last 250 feet of the present [?] and cut and drive the Burleigh tunnel 300 feet northeasterly from the present northeast face of the Burleigh tunnel for the purpose of cutting the projection of the Wisconsin, Illinois ore shoot on the Burleigh tunnel level."

Here again is an example of poor planning. The applicant on his map indiscriminately connects the Burleigh tunnel level (9,150') with the Pelican level (9,600') and shows his proposed crosscut on the "Burleigh" level starting at the end of an inaccessible crosscut on the Pelican level! Actually, the Burleigh tunnel ends about 200 feet east of the Guenzi raise or approximately 200 feet west of where the applicant has it shown. Therefore, a crosscut, from the present face on the actual Burleigh level, would have to be driven at least 500 feet to an inferred intersection with the Wisconsin-Corry City vein. Moreover, the Wisconsin-Illinois ore shoot on the Wisconsin-Corry City vein, which the applicant states is his target, is apparently not

present below the 5th level (9,700') as shown by available mine maps. Therefore, inasmuch as the limited general information concerning the vein is unfavorable and no evaluation could be made from the field examination, Government participation cannot be recommended for this project.

> (4) "Drive a 200 ft. crosscut from a point 80 feet southwest of the Guenzi raise on the Burleigh level to the face of the east drift from the Guenzi raise. (The east drift from the Guenzi raise is now caved) Then drift 200 feet east along this the Pelican-Bismarck vein. The Pelican-Bismarck drift on the Diamond level shows ore in the bottom of the drift. This Burleigh level drift would explore the vein on the Burleigh level 150 feet below the Diamond level."

According to the information available to us, considerable drifting and some stoping have already been done along the Pelican-Bismarck vein on the Burleigh level. U. S. Bureau of Mines maps show at least 160 feet of drift along the vein to the east of the Guenzi raise where the applicant proposed to work and which is now caved and inaccessible. The vein along this drifted area is reportedly quite poor and only one small area was stoped. Bureau of Mines sampling along the drift average only 4.4 oz. of Ag, 3.7 percent Pb, and 3.8 percent Zn. Furthermore, three drill holes put down by the Bureau of Mines to explore the Pelican-Bismarck vein under the Burleigh level, intersected only a slightly mineralized structure. It is apparent, therefore, that this area has been rather adequately explored,

with discouraging results, and does not warrant additional Government subsidized exploration.

> (5) "Retimber the last 400 feet of the Corry City drift and drive 500 feet northwest on the Corry City vein on the Diamond tunnel level. This will explore this vein beyond any previous exploration. The Corry City vein has been an abundant producer of silver-lead ore and the present face of this drift has ore showing."

The present face of the Corry City drift on the Diamond tunnel level is a cave in a small stoped area. Available mine maps show the drift to continue through this stoped area into barren ground beyond. The Corry City vein along the accessible portion of the Diamond level is apparently a strong structure but weakly mineralized. A 3-foot channel sample from the back of the drift at the beginning of the stoped area assayed 6.9 oz. Ag, 0.5 percent Pb, and 0.05 percent Zn. The paucity of mineralization on the lower levels was noted by Spurr and Garrey who stated (page 197):

> "The greater portion of the ore taken from this lode [Wisconsin-Corry City] has been obtained from the surface down to a depth of 300 to 500 feet. Below this depth there was very little.... The lowest level of the vein is in the Diamond tunnel, which is about 750 feet below the lower Wisconsin tunnel. Here the lode is very poorly mineralized, containing practically no filling whatever for considerable distances."

Government participation in this project is not recommended.

> (6) "Core drill 7,500 feet of horizontal holes to explore mineral zones. The ore occurs in veins which are within wide breccia zones or channels which are 100 feet or more in width. The Seven-Thirty mineral zone which strikes N. 70 to 80° E. and the Bismarck-Pelican mineral zone which strikes

S. 60° E. are the two big mineral zones. The drifts which have been run along these channels have encountered ore but there may be parallel veins within the channels which are virgin. Core drilling will explore these wide channels. This drilling will be done where geological conditions indicate parallel ore veins. Most of these holes will be less than 75 feet."

Inasmuch as the applicant has not presented a definite plan to utilize the 7,500 feet of core drilling proposed, we are forced to recommend a denial for this project.

CONCLUSIONS AND RECOMMENDATIONS

The applicant's proposed exploration projects for lead and zinc in the Dives-Pelican mine have been carefully considered. The majority of these projects, which unfortunately lack adequate planning, are based solely on unsubstantiated hearsay information and not sound geologic reasoning. Sampling data, old engineering and geologic studies, and the limited information obtained from the field examination indicate that the applicant's projects are not warranted and will not discover significant amounts of lead and zinc.

Pending rehabilitation work by the applicant, such as dewatering the Ricci winze and clearing caved areas, and a feasible exploration program based on known facts, we recommend that DMEA assistance be denied. The denial should be without prejudice.

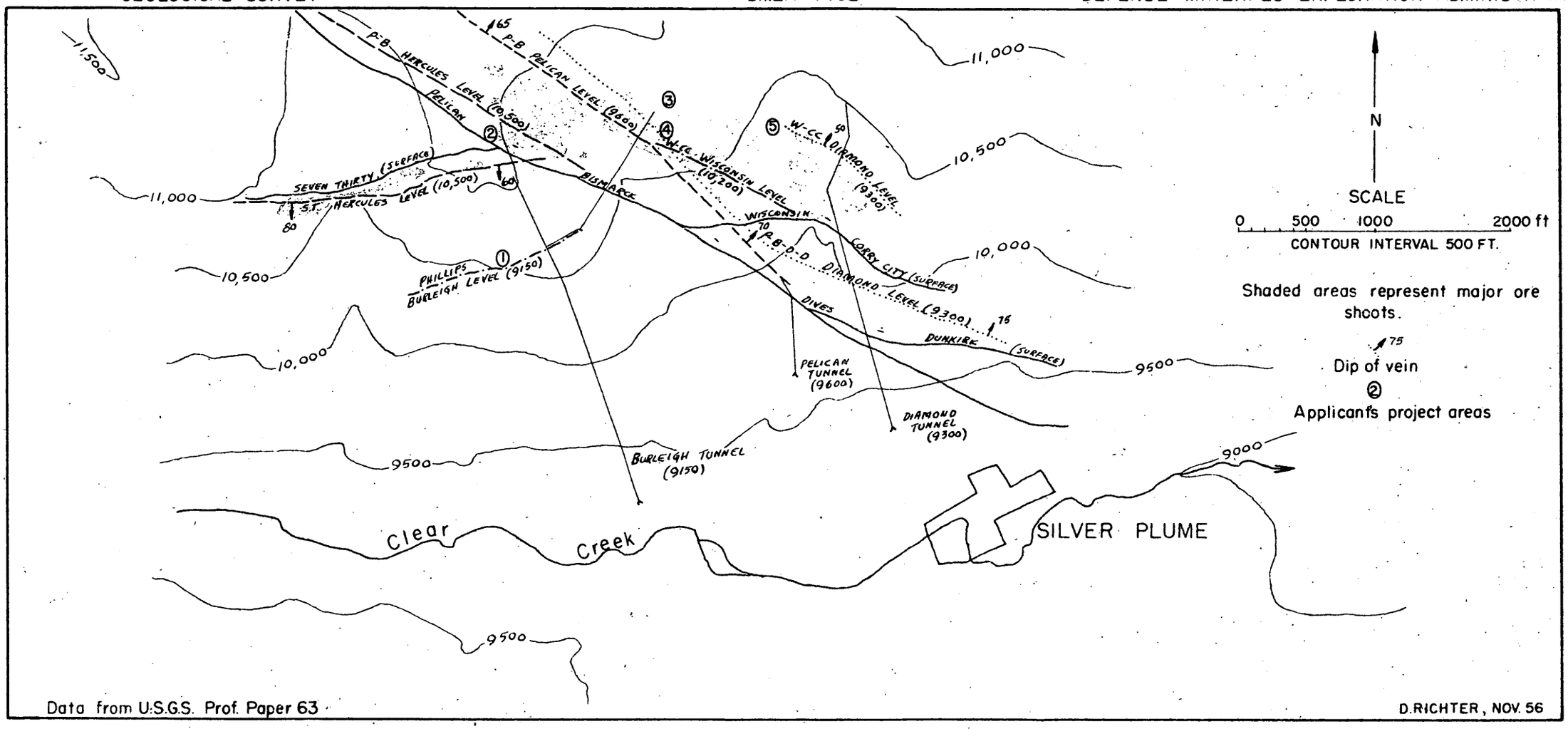

FIGURE 2. MAP OF A PORTION OF THE SILVER PLUME DISTRICT, COLORADO, SHOWING THE PELICAN-BISMARCK-DIVES-DUNKIRK, SEVEN THIRTY, AND WISCONSIN-CORRY CITY VEINS AND SOME WORKINGS.

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DMEA Form 7
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Date	Surname	Code
	Griswold	500
1/11	Selfridge	130
1/11	Johnson	110
		~~100~~
		~~240~~
1/14	CW	225

500

JAN 14 1957

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-4462 (Lead-Zinc)
Lisbon Valley Uranium Company
Dives-Pelican Mine
Clear Creek County, Colorado

Dear Mr. Traver:

As recommended in your December 18 memorandum, we have denied the cited application, but without prejudice. However, we frankly would be somewhat skeptical that worthwhile targets may still exist in this old mining camp, which has been combed over so many times.

We feel that D. H. Richter and E. W. Buel should be commended for the thorough and workmanlike presentation in their joint report on this application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

WRGriswold/er 1/9/57

Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

APPROVED:

Frank D. Lamb (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

R.C.S.

8623

(12-56)

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Date	Surname	Code
	Griswold	500
1/11	Selfridge	130
1/11	Johnson	110
		~~100~~
		225

JAN 14 1957

Mr. Wilder H. Brinton, President
Lisbon Valley Uranium Company
501 Kittredge Building
Denver, Colorado

Re: Docket No. DMEA-4462 (Lead-Zinc)
Lisbon Valley Uranium Company
Dives-Pelican Mine
Clear Creek County, Colorado

Dear Mr. Brinton:

Your application for aid for an exploration project and other reports available to us in Washington referring to the subject property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting a certain amount of lead-zinc ores on your property, indicates to us that the probability of disclosing significant ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied, but without prejudice to the property. However, if you do additional work on the property which would disclose significant and favorable information we would be glad to consider a new application.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

Frank E. Johnson (fw)

ACTING Administrator

WRGriswold/er 1/9 & 11/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Region III (2)
Mr. Kiilsgaard, USGS

R.C.B.

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DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
	Griswold	500
		130
		110
		100
		225

Mr. Wilder H. Brinton, President
Lisbon Valley Uranium Company
501 Kittredge Building
Denver, Colorado

Note Lamb
Note Kilsgaard

Re: Docket No. DMEA-4462 (Lead-Zinc)
Lisbon Valley Uranium Company
Dives-Pelican Mine
Clear Creek County, Colorado

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We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

Administrator

WRGriswold/er 1/9/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

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

January 9, 1957

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA-4462, Lisbon Valley Uranium Company, Dives-Pelican Mine, Clear Creek County, Colorado, Lead-Zinc.

In the "good old days" the camp of Silver Plume was one of the better Colorado silver-lead producers. While never a great camp, of the magnitude of Leadville, nevertheless for some 30 years it was an important item in the mineral economy of the State. Veins were narrow, but of fairly high grade.

Unfortunately, and in common with most all of the Front Range mines, (Boulder, Gilpin and Clear Creek Counties), most of the ores were bottomed at around 500-600 foot depth. Throughout the whole area the country rocks are generally granites and granite gneisses and deep mines are almost unknown.

I presume that a score of attempts have been made to rejuvenate Silver Plume. The early attempts met with at least a limited degree of success, since there were large tonnages of dumps and stope fills to scavenge. But all attempts to truly rejuvenate the mines have been foredoomed to failure.

The present application merely represents one more such attempt. Maybe, if the Applicant does enough preliminary rehabilitation at its own expense, evidence might be uncovered to warrant a DMEA project, but I doubt it.

W. R. Griswold

W. R. Griswold

DMEA Form 7
(12-56)

500

OFFICIAL FILE COPY

Date	Surname	Code
		500
		~~100~~
		225

January 9, 1957

Memorandum

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Subject: Denial of Application, Docket No. DMEA-4462, Lisbon Valley Uranium Company, Dives-Pelican Mine, Clear Creek County, Colorado, Lead-Zinc.

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W. R. Griswold

W. R. Griswold

WRG/er
Copy to: Docket
Base Metals
Chron.

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

January 7, 1957

Re: DMEA 4462; Lead-Zinc;
$110,520.00
Lisbon Valley Uranium Co.,
Dives-Pelican Mine
Clear Creek County, Colo.

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, Branch of Base Metals

Subject: Review of Field Team report dated December 18, 1956 and received December 28, 1956 on subject application.

The applicants propose to rehabilitate the Burleigh and Diamond tunnel levels, dewater the Ricci winze and drift and core drill to explore downward or lateral projections of reported ore bodies.

The field examiners Richter (USGS) and Buel (USBM) found that the merit of the proposals could not be checked adequately because access to many critical sections was blocked by caved or flooded areas. Where access could be had or reliable information was available the examiners concluded the geologic and engineering evidence pointed to basic unsoundness in the program of exploration outlined by applicant. In an unusually well stated analysis (pp. 14-19) they review all elements of the exploration program pointing serious errors of fact or conclusion which indicate the proposed work is unsound and should be denied without prejudice.

I concur with the views expressed by the field examiners and the Field Team.

O. M. Bishop

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

IN REPLY REFER TO:

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

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DMEA
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DATE | INITIALS | CODE
1-4 | WRG | 500

January 2, 1957
Re: DMEA 4462
Lisbon Valley Uranium Company
Silver Plume mines
Clear Creek County, Colorado
$110,520.00 - Lead-zinc

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance on a six-part project consisting of rehabilitation of parts of old mines, searching from deep workings for downward extensions of ore shoots that were old time producers of lead, zinc, and silver in higher levels, and diamond drilling for possible parallel veins.

The examiners, in a well prepared report, analyze the six projects and conclude some of the proposed work is poorly planned and little or none of it can be justified by available geologic and engineering data, data not considered or, if considered, disregarded by the applicant.

The applicant has done some preparatory work and apparently contemplates doing more. The examiners and the Field Team recommend that the application be denied without prejudice.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

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

224 New Customhouse
Denver 2, Colorado

December 18, 1956

RECEIVED
DEC 21 1956
D.M.E.A.

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Joint Report of Examination Docket DMEA 4462 (lead-zinc)
Lisbon Valley Uranium Company (Dives-Pelican Mine)
Clear Creek County, Colorado

Enclosed are the original and three copies of a joint engineering and geologic Report of Examination on the subject property.

The examiners conclude that the program proposed by the Applicant is ill-conceived and, in general, not founded on geologic facts. Because of caved, or flooded workings, the examiners were unable to obtain more data on the probable significance of the targets; most of which, consist of a downward or lateral extension of reported ore bodies. Therefore, they were unable at this time to amend the program proposed by the Applicant. They recommend that the application be denied without prejudice, based on the possibility that the Applicant will complete enough rehabilitation work to permit probable evaluation of potential targets which may exist in the mine. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
12-26-56
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
DEC 14 1956
REGION III
DENVER, COLORADO

TRANSMITTED
DEC 18 1956

RECEIVED
DEC 21 1956
D.M.E.A.

DEC 18 1956

December 13, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw
E. N. Harshman

Subject: DMEA Docket 4462 (Lead-zinc), Lisbon Valley Uranium Company (Silver Plume mines), Clear Creek County, Colorado

Enclosed are the original and eight copies of a joint report by D. H. Richter, U. S. Geological Survey, and E. W. Buel, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes a program of drifting, crosscutting, and diamond drilling to explore for lead-zinc-silver ore on the Dives-Pelican and other mines in the Silver Plume area. The estimated total cost of the project is $110,520.

The examiners conclude that the program proposed by the applicant is ill conceived and in general not founded on known geologic facts. A good example of the lack of intelligent planning on the part of the applicant is his "Project No. 2" which proposes to explore for ore on the Burleigh level. The proposed target is 1,350 feet vertically below an ore shoot on the Dives-Pelican vein - a vein which dips an average of about 65° to the northeast (away from the point of origin for the proposed crosscut).

Reviewed by
DMEA OPERATING COMMITTEE
12-26-56
(date)

Because of caved or flooded workings, the examiners were unable to collect data on the probable significance of the targets most of which consist of the downward or lateral extension of reported ore bodies. They were thus unable to ammend the poor program proposed by the applicant.

Considerable data were available to the examiners in the form of U. S. Bureau of Mines and U. S. Geological Survey reports. Based on these data the examiners conclude the targets the applicant proposes to explore are poor, or have already been explored.

The examiners recommendation of denial without prejudice is based on a possibility that the applicant will complete enough rehabilitation work to permit an evaluation of potential targets which may exist in the mine. We concur with the conclusions and recommendations of the field examiners.

John F. Shaw
Supervising Mining Engineer

E. N. Harshman
Member, Field Team

Enclosures (9)
ENHarshman:mp

FOR UNITED STATES GOVERNMENT USE ONLY

TRANSMITTED
DEC 18 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

RECEIVED
DEC 21 1956
D.M.E.A.

DMEA 4462

Lisbon Valley Uranium Company

Dives-Pelican mine

Clear Creek County, Colorado

Lead-zinc

Joint Engineering and Geological Report

by

D. H. Richter, Geologist
Geological Survey

E. W. Buel, Mining Engineer
Bureau of Mines

December 11, 1956

Reviewed by
DMEA OPERATING COMMITTEE
12-26-56
(date)

RECEIVED 21 1956 J.M.E.A.

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Figure — Follows page

1. Location of Lisbon-Valley uranium property, Clear Creek County, Colorado. DMEA 4462..... 4

2. Map of a portion of the Silver Plume district, Colorado, showing the Pelican-Bismarck-Dives-Dunkirk, Seven-Thirty, and Wisconsin-Corry City veins and some workings. DMEA 4462..... 19

3. Map showing project areas from the Burleigh tunnel level, Silver Plume mining district, Clear Creek County, Colorado. DMEA 4462.....19

DMEA 4462

LISBON VALLEY URANIUM COMPANY
DIVES-PELICAN MINE
CLEAR CREEK COUNTY, COLORADO

RECEIVED 21 1956 D.M.E.E.

SUMMARY

Lisbon Valley Uranium Company, Denver, Colorado, on September 12, 1956, made application to the Defense Minerals Exploration Administration for aid in exploring for lead and zinc in the old Dives-Pelican and other contiguous mines. The estimated cost of the program is $110,520.

The property was examined on November 15, 1956, by an examining team from the U. S. Bureau of Mines and the U. S. Geological Survey.

The property consists of the consolidation of the Seven-Thirty, Bismarck, Dives-Pelican, Wisconsin, Corry City, and Dunkirk mines and other miscellaneous lands near the town of Silver Plume in Clear Creek County, Colorado. The mines are at elevations ranging between 9,000 and 10,500 feet and are easily accessible.

The Dives-Pelican lode was discovered in 1868, and between the years 1870 and 1901, the district was an important producer of lead, zinc, and silver. Mining was conducted intermittently up to 1914, but since that time relatively little work has been done. Most of the mine workings are now inaccessible, due both to caved ground

and flooded areas. During 1942-43 the U. S. Bureau of Mines in conjunction with the U. S. Geological Survey conducted a fairly extensive, but unrewarding, exploration program on the subject property.

The lead-zinc-silver ores occur as fissure filling and replacement-type deposits in Precambrian Silver Plume granite, the granite and biotite gneisses of the Precambrian Idaho Springs formation, and Tertiary acid intrusives. The veins occur in fault and shear zones whose courses have usually been determined by pre-existing Tertiary dikes. Sphalerite and argentiferous galena are the principal ore minerals.

The applicant's proposed exploration program, which consists of six projects, lacks adequate planning and is not based on sound geologic reasoning or engineering principles. The information available on the mines indicates that significant deposits of lead and zinc will not be discovered through the proposed program, and therefore it is recommended that DMEA assistance be denied.

INTRODUCTION

Lisbon Valley Uranium Company applied for DMEA assistance to explore for lead-zinc ores on property consisting of the Seven-Thirty, Bismarck, Dives-Pelican, Wisconsin, Corry City, and Dunkirk

mines and the Burleigh and Diamond tunnels. The applicant's estimated cost of DMEA assistance is $110,520, of which the Government's share at 50 percent is $55,260.

An examination was made of the property on November 15, 1956, by a DMEA examining team composed of Donald H. Richter, U. S. Geological Survey, and Edward W. Buel, U. S. Bureau of Mines. The team was accompanied by James M. Knowles, chairman of the board of directors of the subject company.

Most of the mine workings are inaccessible; however, it was possible to enter parts of the Burleigh and Diamond tunnel levels from which the applicant proposes to do his exploratory work. With the exception of the areas referred to by the applicant as "Project No. 2," the remainder of the applicant's "Project" areas could not be adequately examined because of caved and flooded ground.

The property has been investigated on several occasions by members of the U. S. Bureau of Mines and U. S. Geological Survey. Upon their recommendations, the Government conducted two exploration programs. One was the Bureau of Mines Project 1561 from September 1942 to February 1944, the other, a DMEA project under contract I-DMA-E 37, from June 1951 to January 1954.

Because of the complex vein system, especially in the Pelican-Dives mine, the names of the veins and/or mines is indiscriminately

used in Government publications. This makes it difficult, in some instances, to select production figures and/or other pertinent data for inclusion in this report, and much of the data cannot be specifically broken down and assigned to any individual mine.

LOCATION AND ACCESSIBILITY

The property is in secs. 13 and 14, T. 4 S., R. 75 W., 6th P.M., Silver Plume mining district, Clear Creek County, Colorado (fig. 1). It is on the north side of Clear Creek canyon, adjacent to the town of Silver Plume, on U. S. Highway 6 (fig. 2). Silver Plume is approximately 50 miles west of Denver.

All of the mines included within the property can be reached readily from Silver Plume by way of short steep mountainous roads, some of which are kept in serviceable condition throughout most of the year.

GEOGRAPHY

The topography of the district is one of pronounced relief - precipitous peaks, narrow valleys, and steep V-shaped canyons. The altitude ranges from approximately 9,100 feet at Silver Plume, to over 12,300 feet atop Republican Mountain less than 2 miles north of Silver Plume.

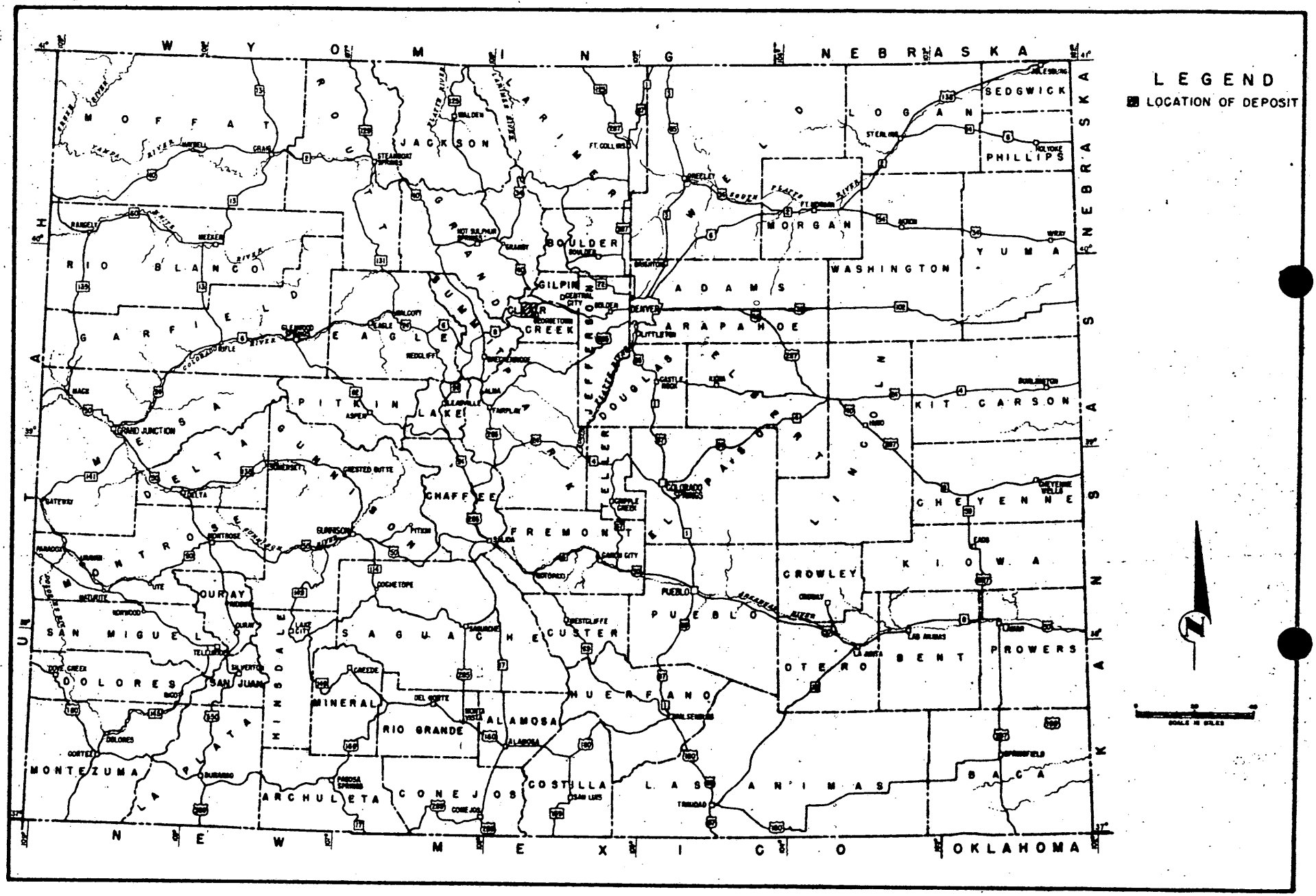

FIGURE 1 - LOCATION OF LISBON-VALLEY URANIUM PROPERTY, CLEAR CKEEK COUNTY, COLORADO. DMEA 4462

The mining district is drained by Brown, Cherokee, and Snowdrift Gulches, which lead into Clear Creek canyon. Water for mining is plentiful.

Vegetation consists chiefly of scattered spruce, pine, fir, and aspen. Timber-line is approximately at 11,000 feet. Much of the mine timber can be obtained from sawmills within the general region.

The climate is one of moderately warm summers, and winters that are not considered severe. Annual precipitation does not amount to much more than 20 inches at Silver Plume. The greatest precipitation results from thunderstorms which occur almost daily from April to August. The lower valleys are free of snow throughout much of the year, but the higher peaks are snow covered from fall to spring. Except for occasional snowstorms which may disrupt mining operations for several days, the principal mines can be operated the entire year.

Most mining supplies can be obtained in Georgetown or Idaho Springs, 2 and 12 miles, respectively, east of Silver Plume by highway. Adequate labor and housing are available at Silver Plume, as well as at Georgetown, Idaho Springs, and other nearby communities.

The area is served by truck lines. The nearest railheads are at Denver and Climax, 50 miles east and 50 miles west, respectively of Silver Plume.

Electric power may be obtained from a line that passes over the property.

The applicant operates a concentrating mill at Silver Plume. Lead concentrates are shipped to the American Smelting & Refining smelter at Leadville, Colorado, approximately 64 miles by highway to the west. Zinc concentrates would probably be trucked to Denver and then shipped by rail to the A. S. & R. smelter at Amarillo, Texas.

PROPERTY

The property consists of the consolidation of the Seven-Thirty, Bismarck, Dives-Pelican, Wisconsin, Corry City, and Dunkirk mines, the Burleigh and Diamond tunnels, and other miscellaneous lands as described in the applicant's DMEA application. The property comprises an estimated, all or portions of, 114 patented lode claims, 10 unpatented lode claims, 1 patented placer claim, 6 patented mill sites, 8 tunnel sites, and miscellaneous lands and right-of-ways, and is owned by John A. Smith of Silver Plume, Colorado.

The applicant has a 20-year mining lease with an option to buy. The effective date of the lease is July 13, 1956.

HISTORY AND PRODUCTION

The first ore discovery in the Silver Plume mining district was made in June 1866. It was not until 1868, however, that the principal lode, the Pelican-Dives, was discovered. Soon after the major discovery, a number of lawsuits over mineral rights were instigated, which

prevented any significant ore production until 1870. Fierce quarrels and a continuation of suits and counter suits occurred up until March of 1880 when the Pelican and Dives properties were consolidated and controlled by the Pelican and Dives Mining Company. This company soon began to acquire neighboring mining properties - the Bismarck and Seven-Thirty mines, and others.

About 1938, the present owner, Mr. John A. Smith, became interested in several of the mines included within the property, and acquired title to them through tax sales and by outright purchases.

The greatest production occurred during the period 1870-1901. Since that time the mines have been worked intermittently on a minor scale. Relatively little work was done in the district after 1914.

A Preliminary War Minerals Report, prepared by the U. S. Bureau of Mines, states that the Silver Plume district's production prior to 1901 is estimated at 300,000 tons, and during the period of 1901-1937 was 492,614 tons, over half of which came from mine dumps, chiefly from those of the Dives-Pelican mine. Most of the earlier production was high-grade silver ore; lead-zinc ore, low in silver, was often left in the stopes.

PRESENT STATUS

The property has been extensively developed. The total amount of underground workings is estimated at several tens of miles. Most

of the workings above the Burleigh and Diamond tunnel levels are inaccessible principally because the caving of stoped areas.

At the time of the examination the Ricci (Phillips) winze was pumped out to nearly the 90-foot sub-level, which was partly filled with water. The condition of the 90-foot sub-level is not known, but is presumed to be open. It is reported that normally the Ricci winze is flooded to its collar. The Burleigh tunnel beyond the Phillips junction (fig. 3) would require a minor amount of rehabilitation in the form of laying track. The northeast extension of the Phillips drift is caved at approximately 172 feet beyond the Guenzi raise. Maps indicate that the Phillips drift extends 232 feet beyond the Guenzi raise and the area would require extensive retimbering. On the Diamond tunnel level, the Corry City northwest drift is accessible for about 380 feet from its junction with the Diamond tunnel; it is caved beyond this point. The amount of drift rehabilitation beyond the beginning of the caved area could not be determined.

The applicant is currently working on the property. As nearly as could be determined from the examination of the Burleigh and Diamond tunnel levels, the applicant's mining activities appear to be confined chiefly to rehabilitation and recovery of stope fill which is processed at the applicant's mill in Silver Plume.

GEOLOGY

The Dives-Pelican and other mines included in the subject property, well known producers of lead-zinc-silver from 1870 to about World War I, are in the Silver Plume mining distirct of Clear Creek County, Colorado. The area has been extensively studied by Spurr and Garrey 1/ and more recently by Lovering and Goddard 2/. Most of the workings in the mine are now inaccessible, due both to caved ground and water, and therefore in this report, only a brief general geologic outline is presented for the purpose of orientation. Detailed regional and local geology has been described by the above authorities.

Host rocks for the lead-zinc-silver veins in the district are: (1) a series of granite and biotite gneisses of the Precambrian Idaho Springs formation; (2) the Silver Plume granite, a Precambrian intrusive; and (3) Tertiary (?) acid porphyry dikes.

1/ Spurr, J. E., and Garrey, G. H., Economic geology of Georgetown Quadrangle, Colorado, U. S. G. S. Prof. Paper 63, 1908.

2/ Lovering T. S., and Goddard, E. N., Geology and ore deposits of the Front Range, Colorado, U. S. G. S. Prof. Paper 223, 1950.

The Dives-Pelican vein also known as the Pelican-Bismarck (northwest) and Dives-Dunkirk (southeast) is the main ore-bearing structure on the property. Two smaller structures - the Seven-Thirty and Wisconsin-Corry City veins - branch off this main system at the northwestern and southeastern ends respectively (fig. 2). The Dives-Pelican-Bismarck vein, which trends N. 60° W. and dips 50° to 90° NE, has formed along a strong fault zone, whose course was determined by a pre-existing dike of rhyolite porphyry. The Seven-Thirty and Wisconsin-Corry City veins also occur along zones of movement which are related to, but of lesser magnitude than, the break along the main Dives-Pelican-Bismarck system. The Philips vein occupies a fracture zone approximately 600 feet south of, and parallel to, the Seven-Thirty vein. This vein apparently does not intersect the Dives-Pelican-Bismarck vein, but is one of the many small subsidiary fractures, in part mineralized, that are so common in the area.

The veins are both fracture fillings and replacement-type deposits occurring sporadically along, and throughout, relatively wide brecciated fault zones. Furthermore, the ore on the veins tends to occur in definite shoots for which there is little or practically no known control. The main ore shoot on the Dives-Pelican-Bismarck vein occurs in the interval between the intersections of the Seven-Thirty and Wisconsin-Corry City veins, yet these two latter veins are essentially barren at

the intersection. The ore shoots on Seven-Thirty and Wisconsin-Corry City veins occur at least 500 feet from the intersection. As a general rule the hard and brittle Silver Plume granite and the Idaho Springs granite gneisses make more favorable host rocks for ore deposition than the relatively soft and easily sheared acid porphyries.

The principal sulfide minerals of the veins are sphalerite, argentiferous galena, and locally, considerable pyrite. Sulfides of silver are also present in minor amounts, especially in the upper levels. The chief gangue mineral is quartz with some barite, calcite, and siderite.

SAMPLING AND ORE ESTIMATES

The U. S. Bureau of Mines, in conjunction with its Project 1561, conducted extensive sampling in several of the mines included in the applicant's property. The results of the Bureau's sampling will be discussed in detail, especially for those areas proposed for exploration by the applicant (fig. 3).

Channel samples numbered 85 through 92, as given in the Bureau's unpublished Final Report - Silver Plume District - Project 1561, Appendix III, taken in the Ricci (Phillips) winze show the following weighted sample data:

Samples	Average width	Zn (Percent)	Pb (Percent)	Ag (Oz.)
86 to 92*	2.2 ft.	3.96	6.13	7.07

*Sample 85 excluded, as it was taken in gouge.

Sample 86 which was taken 15 feet below the collar of the winze gave the following results:

Width (feet)	Zn (Percent)	Pb (Percent)	Ag (Oz.)
1.5	9.3	16.9	16.0

It should be pointed out that sample 86 is nearby to what is thought to be the lower limits of an ore body that had been extensively stoped (now caved) above the Ricci winze area. Sample 86, therefore, is not representative of the vein as exposed in the Ricci winze and should be discounted in the assay computations. Excluding sample 86, the vein in the Ricci winze gives the following weighted sample data:

Samples	Average width	Zn (Percent)	Pb (Percent)	Ag (Oz.)
87 to 92	2.4 ft.	2.1	2.6	4.9

The Bismarck-Pelican vein, along which the applicant proposes to do 200 feet of drifting in the vicinity of the Guenzi raise, has been adequately sampled and diamond drilled by the Bureau of Mines. The results of the Bureau's sampling are as follows:

Samples	Average width	Zn (Percent)	Pb (Percent)	Ag (Oz.)
72, 73, 75, 77 to 83 (along drift)	3.7 ft.	3.8	3.7	4.4
67, 68 (at Guenzi raise)	not given	0.9	0.6	1.9
74 (35 ft. up raise)	1.0 ft.	0.4	2.4	8.2

The gold content in all samples is negligible.

Three Bureau of Mines diamond drill holes explored the Bismarck-Pelican vein in the vicinity of the Guenzi raise area. These holes tested the vein over an estimated linear distance of 300 feet and at depths ranging from 70 to 136 feet below the Burleigh tunnel level. Drill hole sample data for the more favorably mineralized portions are tabulated as follows:

Hole No.	Interval (feet) From	To	(Percent) Zn	Pb	Oz. Ag	Au
DD No. 1	309.3	312.5	1.4	0.1	1.2	0.01
DD No. 2	167.0	167.3	2.5	3.4	4.3	0.02
DD No. 3	128.8	130.8	0.4	0.005	0.5	Tr.

No sample data are available for the northwest drift of the Corry City vein on the Diamond tunnel level. During the field examination, a sample (EB-27) was cut across the vein at a point approximately 380 feet from the intersection of the Corry City northwest drift and Diamond tunnel (crosscut). The results of assays of this sample are as follows: 6.9 oz. of Ag, 0.5 percent Pb, 0.05 percent Zn.

A number of Bureau of Mines and miscellaneous reports give various ore estimate figures amounting to several hundred thousand tons of indicated and inferred ore reserves for mines within the Silver Plume mining district. Since the preparation of most of these reports, made during the World War II years, portions of some of the mines have been worked so that an estimate of present ore reserves is not possible. Furthermore, all of the ore reserves that have been estimated have been in workings far above the Burleigh and Diamond tunnel levels.

From an examination of the workings on the Burleigh and Diamond tunnel levels, it is believed that some marginal lead-zinc ore may exist as stope fill. An estimate of the possible ore reserves on the tunnel levels was not possible, principally because the ground was caved.

APPLICANT'S PROPOSAL AND DISCUSSION

The applicant proposes an exploration program consisting of six projects (fig. 3). We have carefully studied these projects, both in the field (to the extent mine conditions permitted) and in the office and find that all six are untenable because of (1) geology, (2) lack of adequate information, or (3) poor planning. The applicant's six projects, together with our appraisals of them are given below:

(1) "Dewater the Ricci winze which was sunk from the Burleigh tunnel level on the Phillips vein and drift southwest 500 feet along the Phillip vein on the 90 foot sublevel of the winze. Ore has been mined along the Phillip vein on and above the Burleigh tunnel level and there is ore in the bottom of the Phillip vein drift on the Burleigh level. The drift is now caved beyond the winze."

At the time of our examination the 90-foot sublevel of the Ricci winze was under 2 to 3 feet of water, making an inspection of the Phillips vein on the sublevel impossible. The Phillips vein along the winze and Burleigh level drift is for the most part a 1- to 2-foot thick brecciated zone in granite gneiss and Silver Plume granite, containing very minor amounts of sphalerite. There is evidence that an ore body has been mined beyond the winze but, as the applicant states, the ground is caved and no inspection of the vein was possible. Furthermore, Bureau of Mines samples taken in the winze average only 4.9 oz. of Ag, 2.6 percent Pb, and 2.1 percent Zn over a 2.4-foot length. Therefore, on the basis of our limited field examination and information, we cannot recommend further exploration along the Phillips vein.

(2) "Drive the Burleigh tunnel 300 feet [in a] northwesterly direction from the present main tunnel face. The purpose of this is to cut under the mineralized zone which produced abundance of ore on the Hercules tunnel level."

This proposed project is solely the outcome of poor planning. The Burleigh tunnel is at an elevation of 9,150 feet. The main ore shoot, on the Hercules level of the Pelican-Bismarck vein, which the

applicant proposes to crosscut under is at an elevation of 10,500 feet, or 1,350 feet above the proposed work! Furthermore, since the dip of the Pelican-Bismarck vein ranges between 50° and 80° to the northeast, the proposed crosscut on the Burleigh level if continued along its present course, would have to be driven at least 1,500 feet to intersect the vein. In fact, the closest the proposed crosscut on the Burleigh level would be to the Pelican-Bismarck vein is about 800 feet, measured in a northeast direction, normal to the strike of the vein. Certainly the basis for this work is without merit and unfounded.

> (3) "Retimber the last 250 feet of the present [?] and cut and drive the Burleigh tunnel 300 feet northeasterly from the present northeast face of the Burleigh tunnel for the purpose of cutting the projection of the Wisconsin, Illinois ore shoot on the Burleigh tunnel level."

Here again is an example of poor planning. The applicant on his map indiscriminately connects the Burleigh tunnel level (9,150') with the Pelican level (9,600') and shows his proposed crosscut on the "Burleigh" level starting at the end of an inaccessible crosscut on the Pelican level! Actually, the Burleigh tunnel ends about 200 feet east of the Guenzi raise or approximately 200 feet west of where the applicant has it shown. Therefore, a crosscut, from the present face on the actual Burleigh level, would have to be driven at least 500 feet to an inferred intersection with the Wisconsin-Corry City vein. Moreover, the Wisconsin-Illinois ore shoot on the Wisconsin-Corry City vein, which the applicant states is his target, is apparently not

present below the 5th level (9,700') as shown by available mine maps. Therefore, inasmuch as the limited general information concerning the vein is unfavorable and no evaluation could be made from the field examination, Government participation cannot be recommended for this project.

> (4) "Drive a 200 ft. crosscut from a point 80 feet southwest of the Guenzi raise on the Burleigh level to the face of the east drift from the Guenzi raise. (The east drift from the Guenzi raise is now caved) Then drift 200 feet east along this the Pelican-Bismarck vein. The Pelican-Bismarck drift on the Diamond level shows ore in the bottom of the drift. This Burleigh level drift would explore the vein on the Burleigh level 150 feet below the Diamond level."

According to the information available to us, considerable drifting and some stoping have already been done along the Pelican-Bismarck vein on the Burleigh level. U. S. Bureau of Mines maps show at least 160 feet of drift along the vein to the east of the Guenzi raise where the applicant proposed to work and which is now caved and inaccessible. The vein along this drifted area is reportedly quite poor and only one small area was stoped. Bureau of Mines sampling along the drift average only 4.4 oz. of Ag, 3.7 percent Pb, and 3.8 percent Zn. Furthermore, three drill holes put down by the Bureau of Mines to explore the Pelican-Bismarck vein under the Burleigh level, intersected only a slightly mineralized structure. It is apparent, therefore, that this area has been rather adequately explored,

with discouraging results, and does not warrant additional Government subsidized exploration.

> (5) "Retimber the last 400 feet of the Corry City drift and drive 500 feet northwest on the Corry City vein on the Diamond tunnel level. This will explore this vein beyond any previous exploration. The Corry City vein has been an abundant producer of silver-lead ore and the present face of this drift has ore showing."

The present face of the Corry City drift on the Diamond tunnel level is a cave in a small stoped area. Available mine maps show the drift to continue through this stoped area into barren ground beyond. The Corry City vein along the accessible portion of the Diamond level is apparently a strong structure but weakly mineralized. A 3-foot channel sample from the back of the drift at the beginning of the stoped area assayed 6.9 oz. Ag, 0.5 percent Pb, and 0.05 percent Zn. The paucity of mineralization on the lower levels was noted by Spurr and Garrey who stated (page 197):

> "The greater portion of the ore taken from this lode [Wisconsin-Corry City] has been obtained from the surface down to a depth of 300 to 500 feet. Below this depth there was very little.... The lowest level of the vein is in the Diamond tunnel, which is about 750 feet below the lower Wisconsin tunnel. Here the lode is very poorly mineralized, containing practically no filling whatever for considerable distances."

Government participation in this project is not recommended.

> (6) "Core drill 7,500 feet of horizontal holes to explore mineral zones. The ore occurs in veins which are within wide breccia zones or channels which are 100 feet or more in width. The Seven-Thirty mineral zone which strikes N. 70 to 80° E. and the Bismarck-Pelican mineral zone which strikes

S. 60° E. are the two big mineral zones. The drifts which have been run along these channels have encountered ore but there may be parallel veins within the channels which are virgin. Core drilling will explore these wide channels. This drilling will be done where geological conditions indicate parallel ore veins. Most of these holes will be less than 75 feet."

Inasmuch as the applicant has not presented a definite plan to utilize the 7,500 feet of core drilling proposed, we are forced to recommend a denial for this project.

CONCLUSIONS AND RECOMMENDATIONS

The applicant's proposed exploration projects for lead and zinc in the Dives-Pelican mine have been carefully considered. The majority of these projects, which unfortunately lack adequate planning, are based solely on unsubstantiated hearsay information and not sound geologic reasoning. Sampling data, old engineering and geologic studies, and the limited information obtained from the field examination indicate that the applicant's projects are not warranted and will not discover significant amounts of lead and zinc.

Pending rehabilitation work by the applicant, such as dewatering the Ricci winze and clearing caved areas, and a feasible exploration program based on known facts, we recommend that DMEA assistance be denied. The denial should be without prejudice.

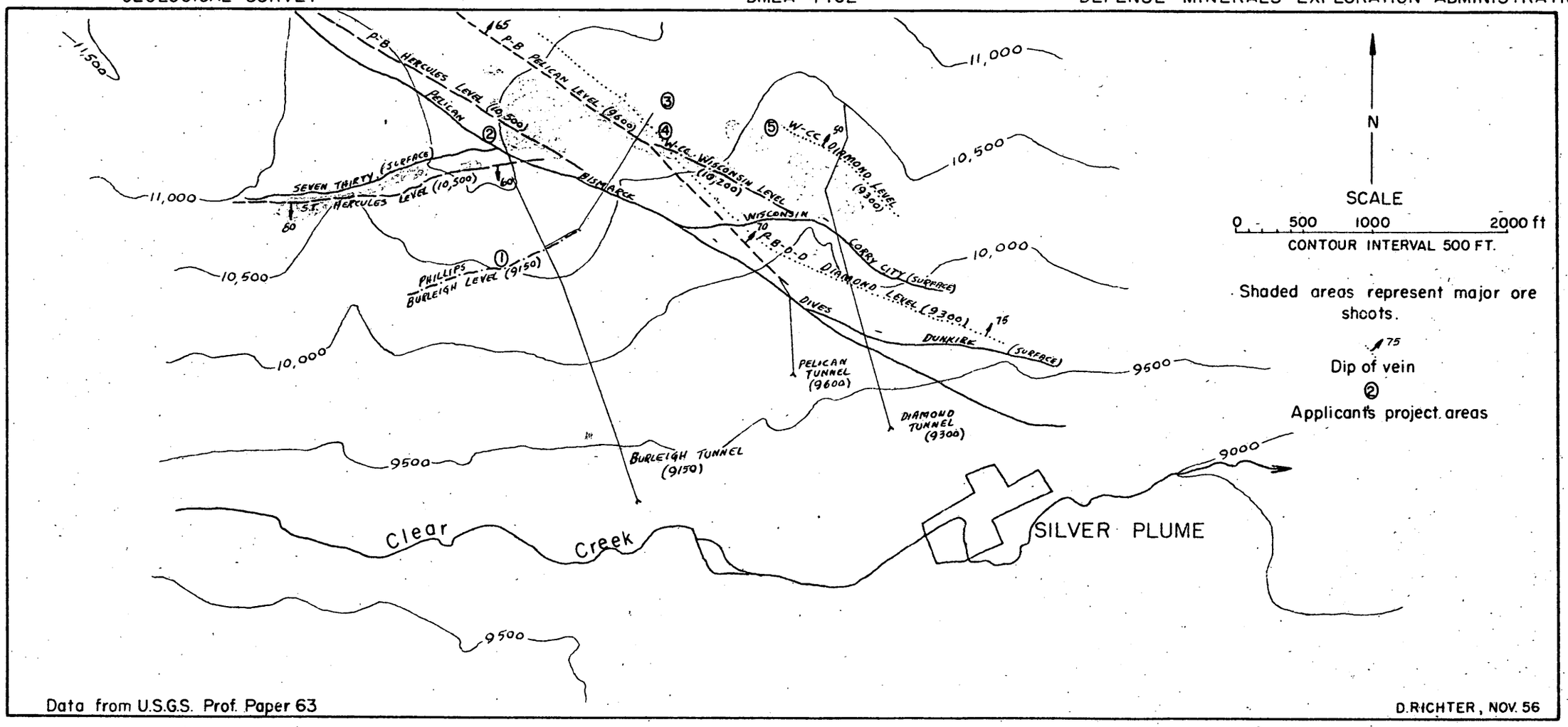

FIGURE 2. MAP OF A PORTION OF THE SILVER PLUME DISTRICT, COLORADO, SHOWING THE PELICAN-BISMARCK-DIVES-DUNKIRK, SEVEN THIRTY, AND WISCONSIN-CORRY CITY VEINS AND SOME WORKINGS.

RECEIVED
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Griswold
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Duncan
Selfridge
Mitchell

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

500

OCT 15 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-4462 (Lead-Zinc)
Lisbon Valley Uranium Company
Dives-Pelican Mine
Clear Creek County, Colorado

Dear Mr. Traver:

We have your memorandum of September 28, forwarding copies of the Mining Lease and Option pertaining to the cited application. You state they are submitted for legal review and our decision relative to their acceptability.

We hesitate to burden our Legal Division, at this time, with such a request. They are more than fully occupied with their normal work load and the job in question, in view of the number of claims involved, etc., could be of a laborious nature. It would be more in order to await the Field Team recommendations, especially in view of our present misgivings concerning this application.

The cost estimates and general set-up of the application cast doubt upon the competency of the Applicant. We emphatically do not wish to get involved in another deal where we would be "flogging a dead horse", as was the case in the John A. and Ben A. Smith project (DMEA-1173).

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

WRGriswold/er 10/5/56

Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

APPROVED:

Frank D. Lamb (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

P. S. We are enclosing two copies of a memorandum from the Associate Solicitor covering Paragraph 32 of the cited lease and option.

R.G.

October 11, 1956

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4462 (lead-zinc) Lisbon Valley Company (Dives-Pelican Mine) Clear Creek County, Colorado

The application for Lisbon Valley Company, Docket DMEA 4462 in the amount of $110,520.00 was received in this office on October 11.

A field examination will be made and suitable report prepared by an engineer from the Denver office.

W. H. King

cc: W. M. Traver (2)
E. N. Marshman
J. F. Shaw
Sec. Op. Com. (2)

RECEIVED
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October 11, 1956

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Superintendent, Denver Experiment Station, Reg. III

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W. H. KING
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cc: W. M. Traver (2)
E. H. Harshman
J. F. Shaw
Sec. Op. Com. (2)

RECEIVED

OCT 1 1956

224 New Customhouse
Denver 2, Colorado

October 10, 1956

Memorandum

To: W. H. King (2) (w/brochure)
E. N. Harshman

From: DMEA Field Team, Region III

Subject: Docket DMEA 4462 (lead-zinc) Lisbon Valley Company (Dives-Pelican Mine) Clear Creek County, Colorado

Enclosed is the subject application in the amount of $110,520.00. A field examination and suitable report are requested.

Your attention is directed to the ideas expressed in the letter from the Chairman of the Operating Committee, dated October 4, 1956, copy of which is attached. Also enclosed are memoranda of review of the Application by O. M. Bishop and W. P. Williams.

Will you please return the brochure with the report of examination.

DMEA Field Team, Region III

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Enclosures
EHC:ytl

cc: Sec. Op. Comm. (2)
Townsend
Docket 4462
Chron.

RECEIVED
OCT 1 5 1956

224 New Customhouse
Denver 2, Colorado

October 10, 1956

Memorandum

To: W. H. King (2) (w/brochure)
E. N. Harshman

From: DMEA Field Team, Region III

Subject: Docket DMEA 4462 (lead-zinc) Lisbon Valley Company (Dives-Pelican Mine) Clear Creek County, Colorado

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DMEA Field Team, Region III

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Enclosures
EHC:ytl

cc: Sec. Op. Comm. (2)✓
Townsend
Docket 4462
Gharon.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

OCT 9 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Base Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4462, Lisbon Valley Uranium Company (Lead-Zinc)

This responds to your memorandum of October 5, 1956, requesting our review of paragraph 32 of the Mining Lease and Option dated July 13, 1956, from John A. Smith to Lisbon Valley Uranium Corporation. That paragraph does not absolve the lessee from its potential liability to the Government arising from the fact that the Government has a lien on some of the lands included in the lease. Rather, paragraph 32 performs two functions:

(a) It informs the lessee that the lands included in the DMEA contract "designated No. Idm. 37," are subject to a lien in favor of the Government for 12 years up to $9,292.41; and

(b) It constitutes an agreement by the lessor to indemnify the lessee against any expenditures or liability to which the lessee is subjected by virtue of the Government's lien.

We have surnamed the proposed letter to the Executive Officer, which suggests that the practicality of the proposed project be first determined.

Robert P. Dwyer

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

OCT 9 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Base Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4462, Lisbon Valley Uranium Company (Lead-Zinc)

This responds to your memorandum of October 3, 1956, requesting our review of paragraph 32 of the Mining Lease and Option dated July 13, 1956, from John A. Smith to Lisbon Valley Uranium Corporation. That paragraph does not absolve the lessee from its potential liability to the Government arising from the fact that the Government has a lien on some of the lands included in the lease. Rather, paragraph 32 performs two functions:

(a) It informs the lessee that the lands included in the DMEA contract "designated No. Idn. 37," are subject to a lien in favor of the Government for 12 years up to $9,392.41; and

(b) It constitutes an agreement by the lessor to indemnify the lessee against any expenditures or liability to which the lessee is subjected by virtue of the Government's lien.

We have returned the proposed letter to the Executive Officer, which suggests that the practicality of the proposed project be first determined.

Robert P. Dwyer

PIndritz/emd
Copy to: Solicitor's Docket (2)
DMEA Docket
W. R. Griswold (2)
P. Indritz
R. P. Dwyer
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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

500

October 5, 1956

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Chief, Base Metals Division

Subject: Docket No. DMEA-4462 (Lead-Zinc), Lisbon Valley Uranium Company, Dives-Pelican Mine, Clear Creek County, Colorado

We call your attention to the Field Team letter of September 28 and our tentative reply. However, will you glance at the lease and option to see if it appears to be in order. Please note item 32 - we do not like it since it seems to absolve the lessee from responsibility.

W. R. Griswold

W. R. Griswold

WRG/er

Copy to: Docket
Base Metals
Chron.

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Surname
Griswold
Lamb
Kilsgaard
Selfridge

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

OCT - 4 1956

Mr. Wilder H. Brinton, President
Lisbon Valley Uranium Company
501 Kittredge Building
Denver, Colorado

Re: Docket No. DMEA-462 (Lead-Zinc)
Lisbon Valley Uranium Company
Bivoe-Pelican Mine
Clear Creek County, Colorado

Dear Mr. Brinton:

Your application for Government assistance to explore the cited property has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration and is being referred to:

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

If additional information concerning your application is needed, the Field Team will get in touch with you at an early date.

Sincerely yours,

C. O. Mittendorf

Administrator

WRGriswold/er 10/3/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.
Region III (2)

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Selbridge
500 Mathewson

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

OCT - 4 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-4468 (Lead-Zinc)
Lisbon Valley Uranium Company
Dives-Pelican Mine
Clear Creek County, Colorado

Dear Mr. Traver:

The cited application is being referred to your office for consideration, a field examination of the property if warranted, and recommendations.

Copies of memoranda dated September 14 and 24, 1956, by W. P. Williams, Geological Survey, and O. M. Bishop, Bureau of Mines, respectively, relating to the project, are enclosed for your information.

We note your statement that this Applicant is now also the owner of the claims covered by Docket No. DMEA-2160 (Mike Vinson and Fred Harris) regarding which we wrote you on September 21. In view of the insignificant sum involved, it would seem that the Lisbon Valley Uranium Company would be willing to assume the proper royalty responsibility. Certainly the Government can scarcely be expected to enter into additional contracts if an Applicant is unwilling to assume its obligations of the present time.

We are not clear as to the lands involved in this application. The Lease and Option from John A. Smith states ". . . those certain mining properties . . . described in "Annex A" hereto attached." We find no "Annex A" attached to the lease.

R.C.S.

As you know, we have, in the past, had unfortunate experiences in projects dealing with rehabilitation of old, caved mine workings. In such instances the cost estimates of the most skilled engineer are little more than wild guesses. You will recall that we expended a considerable sum on the John A. and Ben A. Smith project (DMEA-1173) on this same property to absolutely no purpose. It would seem that this area would be favorable for diamond drilling; hence, we suggest, in the event of favorable consideration by the Field Team, a program based largely upon diamond drilling, with rehabilitation work kept to a minimum. Perhaps additional work could be provided for in a second stage if diamond drilling results were favorable.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

Frank D. Lamb

Member, Bureau of Mines (FDL)

Thor H. Kiilsgaard

Member, Geological Survey (GCS)

WRGriswold/er 10/3/56

Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

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

RECEIVED
OCT - 1 1956

224 New Customhouse
Denver 2, Colorado

September 28, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMA 1173K (Zinc), Contract Idm-E37, John A. Smith and Ben A. Smith (Dives-Pelican Mine), Clear Creek County, Colorado

Enclosed for legal review and your acceptance are two copies of a Mining Lease and Option, dated July 13, 1956, granted by John A. Smith, Silver Plume, Colorado, to Lisbon Valley Uranium Company; also a supplement to this lease and option dated July 16, 1956.

Your attention is called to paragraph of the Lease and Option which relates to Mr. Smith's obligation to the DMEA.

We will appreciate being advised of your decision relative to the acceptability of the enclosed documents.

W. M. TRAVER

W. M. Traver

Enclosure

MHM/vj

cc: Royalty File E37 w/cy legal instrument
Corres. File E37 " " "
J. F. Shaw (2) w/cys " "
Finance Office Reg. III w/cy legal instrument
Marshall
Chron.

RECEIVED
OCT - 1 1956

MINING LEASE AND OPTION

This Mining Lease and Option, entered into this 13th day of July, 1956, by and between JOHN A. SMITH, of Silver Plume, Colorado, hereinafter called "Lessor," and LISBON VALLEY URANIUM COMPANY, a Colorado corporation, hereinafter called "LESSEE,"

WITNESSETH: That

The Lessor, for and in consideration of $2,500.00 paid by the Lessee to the Lessor, receipt whereof is hereby acknowledged, and in consideration of the Lessee's agreement to pay to the Lessor $2,500.00 on August 13, 1956, $2,500.00 on September 13, 1956, and $2,500.00 on October 13, 1956, and in consideration of the rents, royalty, covenants and agreements to be paid, kept and performed by the Lessee, has leased, let and demised, and by these presents does lease, let and demise unto the Lessee those certain mining properties, situate in Clear Creek County, State of Colorado, described in "Annex A" hereto attached.

The list set forth in said "Annex A" is intended to include all mining property in said Clear Creek County which is owned at the date hereof by John A. Smith, sometimes called John Smith. It is agreed that said description is substantially correct, and it is the intent that the Lessee shall have the benefit of all existing rights-of-way, privileges and easements which are incident to the enjoyment of said properties; and that the Lessee shall take subject to all existing contracts affecting extra-lateral rights and boundary lines heretofore made by the Lessor, or by his predecessors, and all easements for the benefit of third parties. If it should be discovered that any description in "Annex A" is inaccurate, then such variations, additions to, and corrections of said description shall be made as are found necessary to reflect the intent of the parties. It is agreed that as to unpatented mining claims, the Lessor makes no warranties or covenants of quiet enjoyment; and there is hereby excluded from this lease any portion of said unpatented claims which may be deeded, relinquished, or lost to the Lessor in settlement of conflicts. All junk metal and machinery now on the premises which is

not useable, and the right to enter and remove same, is reserved to the Lessor.

TO HAVE AND TO HOLD the above described premises for the pur-
Term pose of mining and for no other purpose, for a term of twenty years from the date hereof, unless sooner forfeited or terminated through violation of any of the covenants and conditions herein contained.

The Lessee, in consideration of the premises, has covenanted, contracted and agreed, and by these presents does covenant, contract and agree with the said Lessor, his heirs and assigns, as follows:

1. Relationship of Parties.

The relationship of the parties hereto is exclusively that of Lessor and Lessee (with option to purchase), and no relationship of partner, joint adventurer or otherwise than Lessor and Lessee (with option to purchase) is intended to be or is created by this agreement; there shall be no privity of contract between the Lessor and any of the employees, licensees, contractors, subcontractors, or sublessees of the Lessee, and all prospecting, development and mining operations hereunder shall be under the sole and exclusive control of the Lessee.

2. Assignment.

It is agreed that this lease and option shall not be assigned by the Lessee without Lessor's written consent first had and obtained.

3. Operations by Lessee.

Lessee shall have the right to work and operate on any and all of the demised property, to mine, extract, take and market ores and minerals therefrom; to treat said ores and minerals in a mill or plant on said property, and to ship or take same to any other plant for treatment, reduction or sale; to erect and operate on said property a plant or plants and other facilities for mining, treating or processing of ores and minerals from said property, or other properties, and for processing of the content thereof into any obtainable products; and generally to do any and all things, which Lessee may deem desirable in connection with the operation of the property. The

Lessee shall have the full right of ingress and egress over, under or through the demised property for prospecting, mining, ventilating and draining adjacent or contiguous land operated by Lessee, and Lessee or any person, firm or corporation working by or under Lessee, or purchasing ore from Lessee, shall have the right to place dumps or other debris on the premises; and lessee shall have the right, at its elections and upon giving notice of its desire so to do, to mine ore from the demised premises through or from adjacent or contiguous premises owned by or held under lease by the Lessee.

4. Work Requirements, or Rent in lieu of Work.

Lessee shall have the right of immediate possession of said properties and shall promptly enter thereon and commence operations hereunder. Prospecting, developing and mining may be done at such places and in such manner as Lessee shall elect. Commencing at a date one month after the date hereof, Lessee shall keep at least seven men continuously employed; failing in which the Lessee may prevent a forfeiture of the lease by paying Lessor a flat rental of $500.00 per month for each month in which the requisite number of men are not employed. To determine the men employed, the total number of shifts worked in any calendar month shall be divided by the number of working days in that month, and the result taken as the number of men employed in that month. If rent becomes payable, the same shall be paid on or before the 15th of the month following the month in which the deficiency occurs.

5. Standard of Work.

All mining operations on the premises shall be conducted in a manner necessary to good and economical mining with due regard to the development and preservation of said mining premises as workable mining properties, and to the special covenants herein contained.

6. Taxes.

Lessee shall pay promptly when due all general taxes and assessments which shall be levied or assessed on said property during the life of this lease, and on any improvements on the demised

property, including machinery thereon or therein. Taxes for 1956 shall be apportioned to the date of this agreement.

7. Workmen's Compensation Insurance.

Lessee shall obtain and pay the premiums for and on insurance policies sufficient to save and protect harmless said Lessor and said Lessee from all liability under the Workmen's Compensation Act of Colorado, and under the Colorado Occupational Disease Disability Act, for and on account of injuries to, disablement of, or death of any of Lessee's employees, mining partners, contractors, or subcontractors, licensees and sublessees, and Lessee agrees to furnish to the Lessor before commencing work, and thereafter, from time to time, satisfactory evidence that such insurance is in full force and effect.

8. Timbers.

Lessee shall well and sufficiently timber, with strong, well-fitted and durable timbers, all the workings through which the Lessee may work, in accordance with good mining, and repair or replace promptly all timbering in said workings which may be rendered insufficient by any cause whatsoever; and shall keep the timbering of said workings at all times in good, safe and serviceable condition.

9. Drainage Etc.

Lessee shall keep at all times all shafts, drifts, tunnels, winzes, and other workings through which the Lessee may work, thoroughly drained and clear of loose rock and rubbish, and in a safe and secure condition, unless prevented by extraordinary mining casualty, and shall maintain at all times and leave the floors of all drifts, crosscuts and other workings in good, even, unobstructed condition; and shall stow no waste underground except in such manner that no drifts, shafts, raises, or other working places shall be obstructed thereby.

10. Underhand Work, Etc.

Lessee shall do no underhand stoping, and shall not do any stoping or mining which will endanger any shaft, except with the written consent of the Lessor.

11. Dimensions of Shafts, Drifts, Etc.

All ascents and descents in the workings through which the Lessee shall work, shall be kept equipped at all times with substantial ladders throughout their entire depths; and Lessee shall make all tunnels, drifts, winzes, upraises and crosscuts of adequate size to conform with good mining practice.

12. Inspection, Sampling and Surveying.

Lessee shall allow the Lessor and his agents or representative at any and all times to enter and visit all parts of said leased premises and the workings thereon, and any and all parts of any mill used by the Lessee for concentrating ores, for the purpose of inspection and taking of assay samples; to take samples from any ores awaiting milling or shipment; to have surveys made of the workings by the Lessor's surveyor and assistants whether under or above ground, or both. The Lessee shall furnish the Lessor copies of blue prints of all surveys or maps, including assay plan maps, made by or for the Lessee; and shall generally facilitate in every way such inspection, surveys and sampling.

13. Rights-of-way.

There is expressly reserved to the Lessor the right and privilege to do any and all development work upon the premises hereby leased which may be rendered desirable by reason of any litigation or controversy which may arise and which may affect said leased premises, and to use the hoisting machinery and workings on the leased premises in prosecuting such development work, provided, however, that the same shall not unreasonably interfere with the mining operations of the Lessee and that all ore mined in the prosecution of such development work shall belong to the Lessee herein (insofar as the same shall be taken from ground hereby leased) subject to the royalty hereinafter provided.

14. Expense Books, Payrolls, Etc.

The Lessee agrees to afford the Lessor every facility, at all times during regular business hours for the inspection and copying of all books, assay certificates, accounts, pay-rolls,

vouchers, correspondence, and papers generally of said Lessee insofar as they may relate to indebtedness or liabilities incurred or claimed for work, services, or materials in respect of said premises, or in respect to milling or shipment of ore therefrom.

15. Information.

The Lessee agrees to furnish on or before the 13th day of each month, if requested in writing so to do, a written report showing the number of man shifts worked during the preceding month, and in a general way, the amount of work accomplished during the preceding month and the nature thereof. Lessee shall furnish to Lessor, when requested, full, true and accurate information with regard to the condition of the mine workings on any part thereof in which Lessee shall work, and of the quality or character of the material therein.

16. Liens.

Lessee shall keep said premises and every part thereof at all times free and clear of all mechanics' or miners' liens, or other liens, encumbrances or liabilities; and shall settle, pay and discharge promptly all bona fide wages and indebtedness incurred by the Lessee for work done, services rendered, or material furnished in respect of said premises, failing in which it will suspend work immediately.

Lessee shall forthwith post, and at all times keep posted in some conspicuous place upon the premises hereby leased, a notice that said premises are leased to the Lessee and that the interest of the Lessor therein shall not be subject to any lien for services, labor or material furnished upon or used in connection with this lease, or said premises, said notice to be on behalf and in the name of the Lessor with the signature of the Lessee also attached.

Lessee shall have each and every man employed upon the premises hereby leased, including the Lessee's contractors, sub-contractors, sublessees, or licensees, and their respective employees, and each and every person, company or partnership from which the Lessee buys material on credit, or from which its contractors, sub-contractors, sublessees or licensees buy material on credit, sign a contract as follows:

"(Date)_____

"In consideration of my being employed by Lisbon Valley Uranium Company, or of Lisbon Valley Uranium Company purchasing material from me, I hereby covenant and agree to look solely to said Lisbon Valley Uranium Company for my pay, and I hereby waive all rights or claims that I may have in law or in equity against the properties, or any of them, upon which said labor is bestowed, or to which said material is furnished.

_____"

(all blanks to be properly filled)

And the aforesaid releases shall be by the Lessee promptly delivered to the Lessor.

17. Annual Labor.

The Lessee shall, commencing with the annual period which starts July 1, 1956, perform the requisite annual assessment work required to maintain Lessor's possessory right to The Horrible, Big Gun, Cossack, Wild West, Manhattan, New Era, Advance, Hunt, Ryder, I. Phillips claims (unpatented) embraced in this lease, and shall each year record in the Clear Creek County records appropriate affidavits of labor performed, in accordance with the Statutes of Colorado. Should any additional ground which adjoins the demised premises be located by the Lessee or by any person acting in its behalf, either as lode, placer, or mill site, such location or locations, shall be made in the name of the Lessor; and any location so made shall be and become a part of the demised premises and be subject to all the terms and conditions of this lease.

18. Trespassers.

Lessee shall not allow any persons not in privity with the parties hereto to take or hold possession of said premises or any part thereof under any claim or pretense whatsoever.

19. Accidents.

Lessee agrees that it will save and keep Lessor harmless from any and all accidents to any of Lessee's employees, licensees,

Agents, associates, or visitors, upon the property of the Lessor, or in being conveyed to or from the leased premises, whether such accident is due to the negligence of the Lessee or of its agents, servants, or employees, or otherwise, and will forthwith post and at all times keep posted at the main workings upon the premises hereby leased, a conspicuous notice in the name and on behalf of the Lessor with the name of the Lessee also attached, stating in substance that the premises are leased to the Lessee and that the Lessor will not be liable for damages on account of any such accident. The Lessor shall under no circumstances be liable to the Lessee or its agents, servants, employees, licensees, associates, visitors, or any other person, on account of any such accident.

20. Veins Discovered.

Lessee agrees that if it shall discover in working said premises, any side vein, cross-vein, spurs, or feeders, it will at once notify the Lessor and said veins, cross-veins, spurs or feeders shall be and remain the property of the Lessor, but the same shall be included in this lease.

21. Shipping Ore.

Ore shall be shipped by the Lessee with reasonable diligence after mining, with the right reserved to the Lessor to take and remove all ores not so shipped with reasonable diligence and to apply the proceeds under the directions of this lease.

22. Right of Property in Ores.

It is expressly understood and agreed that the Lessor reserves the property and right of property in and to all ores extracted or to be extracted from said premises and in and to all ores, bullion and concentrates not shipped within ten days after the expiration or other termination of this lease, that all ores which are of too low grade for profitable milling or shipment shall remain on the premises, subject to the sole control and disposition of the Lessor, and that any loss or expense resulting from or incident to any shipment of such low grade ore shall be borne and paid by the Lessee; that all low grade ore brought to surface and not milled or shipped shall be kept separate from and not mixed with waste, so that they may be available for milling or shipment at any time by the Lessor.

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23. Royalty.

The Lessee shall pay, or cause to be paid to the Lessor at Silver Plume, Colorado, a royalty, upon ores mined and sold, in an amount equal to 12½% of the net proceeds thereof. By "net proceeds" is meant the gross value of the metals and minerals paid for, less smelting and transportation charges from the mine, or in the case of concentrates, from the place of concentration. By gross value is meant the basic price paid plus any bonuses paid except transportation bonuses. Smelting charges shall include incidental charges such as charges for small lots, frozen ore, sacked ore, umpires, and ore watchers. Said royalty shall be applicable to both metallic and non-metallic substances.

If the royalty hereinabove provided to be paid does not in the aggregate amount to $40,000.00 on ores and minerals mined and sold during the first twelve months of the term of this lease, or does not amount in the aggregate to $50,000.00 on ores and minerals mined and sold during any twelve-months period thereafter, the Lessee shall pay to the Lessor within thirty days after the end of such period a sum which in addition to the royalties already paid on ores and non-metallic substances so mined and sold, will amount to $40,000.00 for the first twelve months of the term, and will amount to $50,000.00 for each twelve-months period thereafter.

The Lessee shall instruct and direct each mill, smelter, sampler, reduction works or other ore purchaser to deduct the royalty due the Lessor upon settlement for each lot of ore or concentrates sold, and pay said royalty directly to the Lessor. If the Lessee desires to make deposits in the United States Mint, the Lessor and Lessee shall appoint a common agent to make such deposits, and to receive and divide the proceeds.

24. Tax Fund.

Upon settlement for each lot, the smelter or other ore purchaser shall deduct from the proceeds of such lot 2% of the net returns in addition to the royalties above stated and shall pay the same to United States National Bank of Denver, Colorado, for deposit in an account subject to withdrawal upon order of the Lessor and Lessee

and the same shall be held as a tax fund for payment of any taxes levied and assessed against the demised premises as a producing mine. Like deduction and deposit shall be made upon settlement of each mint deposit. The sums so deposited shall be used by the parties for the payment of taxes on the property leased. After payment of taxes for any taxable period, any excess which has been accumulated in said fund by deposits from production during the yearly period for which such production was used as the basis of assessment, shall be returned to the party or parties entitled thereto; and if the amount so deposited in said fund be insufficient for the payment of taxes for any taxable period, the Lessee shall promptly pay to the Lessor, or to the tax collecting official, the amount of such deficiency (without regard to deposits made during any other period).

25. Force Majeure.

If operations under this lease are interrupted or prevented by acts of God, fires, riots, wars, strikes, inability to obtain equipment due to governmental order or action, failure of carriers to transport equipment, or regulations by state or federal action, this lease shall not terminate or be forfeited, and no right of damages shall exist against Lessee by reason thereof, provided operations are commenced or resumed promptly after removal of such cause or causes. If operations be interrupted or suspended as aforesaid, the Lessee shall not be required to pay minimum royalty as hereinabove provided during the period of interruption, and the term of the lease shall be enlarged by a period equal to the period of interruption or suspension.

26. Legal Proceedings.

It is expressly covenanted and agreed between the parties hereto that should any legal proceedings be instituted, such as injunctions, apex suits, or any other proceedings whatever, which would interfere with the possession and enjoyment of the said leased premises, the Lessee shall under no circumstances attempt to hold the Lessor liable in damages or otherwise to the Lessee on account of such disturbed and interrupted possession and enjoyment.

27. State Laws.

All of the operations of the Lessee under this lease shall be conducted as to comply fully in every respect with the laws of the State of Colorado.

28. Forfeiture.

Upon failure to make any of the monthly payments due respectively on August 13, September 13, and October 13, 1956, at the time specified, or upon violation of the provisions of paragraph 7 hereof (workmen's compensation insurance) this lease shall immediately cease and determine, and no notice to the Lessee of cancellation shall be required. Upon violation of any of the other covenants hereinabove reserved and upon the part of the said Lessee to be paid, kept, done and performed, the said Lessor may, at his option and upon written notice to said Lessee specifying the specific violation or violations complained of, and giving notice of his intention so to do, cancel and annul this lease, unless said Lessee shall within thirty (30) days after receiving such written notice cease such violation or violations and pay to said Lessor all moneys then due under this lease and otherwise remedy the matter or matters concerning which it is in default. And if this lease be cancelled for any cause whatever said demised premises, with all improvements now located thereon and also all improvements made by said Lessee furing the life of this agreement, shall be and become forfeited to said Lessor, and said Lessor may thereupon enter upon said premises and dispossess all persons occupying the same with or without force and with or without process of law, or, at the option of the Lessor, said Lessee and all persons found in occupation may be proceeded against as guilty of unlawful detainer.

The cancellation of this lease shall not release the Lessee from its obligation to pay taxes on the property assessed for the year in which such cancellation occurs.

29. Surrender.

The Lessee may at any time while not in default with respect to payment of taxes, give the Lessor thirty days notice in writing by registered mail addressed to the Lessor at Silver Plume, Colorado, of its intention to surrender and cancel this lease, at the same time tendering an amount reasonable estimated to be sufficient to pay the taxes assessed or to be assessed against the property for the year in which the intended surrender shall occur; and thereafter, at

the end of such thirty-day period, this lease and the option herein contained shall terminate.

30. Removal of Machinery.

The Lessee shall have the right, for a period of sixty (60) days after the termination of this lease by limitation or otherwise, to remove all mining and milling machinery placed thereon by said Lessee; but all machinery belonging to the Lessor and other improvements now located on said premises or which may be placed thereon by the Lessee, including buildings, gallows frames, ore bins, rails and underground pipes of every kind or nature, shall be left on said premises; provided, however, that no mining machinery or equipment shall be removed while the Lessee is indebted to the Lessor, nor so long as the Lessee continues to be under obligation to pay taxes.

31. Notices.

All notices, reports, maps, tax receipts, statements, and other data and information to be by the Lessee given to the Lessor shall be given by delivering or mailing the same to the Lessor at Silver Plume, Colorado, and those to be given to the Lessee at No. 501 Kittredge Building, Denver, Colorado, or at such other address as the Lessee shall in writing direct.

32. D.M.E.A. Contract Obligation.

On June 13, 1954, Lessor entered into a "Termination Agreement" with the United States of America acting through Defense Minerals Exploration Administration, under the terms of which the Government is entitled to a lien on ores produced during the period of twelve years from said date from certain of the properties covered by this lease, or until the Government shall have been repaid, by the application of percentage royalties, the sum of $9,292.41 by it expended under Exploration Project Contract designated No. IEM. 37. Any percentages of proceeds of ores, which shall be paid in the discharge of said obligation, shall be deducted from royalties due the Lessor; and the Lessor agrees to keep and save harmless the Lessee from all liability by reason of said obligation.

33. Option.

In consideration of the acceptance of the foregoing lease and the expenditures to be made thereunder, and the well and faithful keeping of the covenants thereof, the Lessor grants to the Lessee an option to purchase the demised property together with all the Lessor's equipment and personal property thereon, at any time while this lease is in effect at a price which shall be $1,000,000.00 less the following:

(a) The $2,500.00 paid at the date hereof as part of the consideration for the granting of this lease.

(b) The $7,500.00 to be paid in three installments of $2,500.00 each on the 13th day of August, September and October, 1956.

(c) All amounts paid as royalty hereunder.

(d) All amounts paid as rental in lieu of doing work.

The foregoing option shall be exercised in the following manner:

On or before fifteen months from the date hereof, the Lessor shall make and execute a good and sufficient mining deed, without warranty, conveying the leased property to the Lessee, and the same, together with such abstracts of title as the Lessor has and a copy of the lease and option agreement shall be escrowed with United States National Bank, Denver, Colorado (or other bank agreed upon by the parties) with appropriate instructions to said bank to deliver the same to the Lessee when the full purchase price is paid. After such escrow is arranged, all payments to the Lessor which are to be credited on purchase price shall be transmitted through the escrow holder, and the escrow instructions to said bank shall so provide.

The forfeiture, surrender or termination of the foregoing lease shall render the above option void.

34. Time is the essence of this contract in all particulars.

35. This agreement shall be binding upon and enforceable by the respective successors, heirs, executors, administrators, and assigns of the parties hereto.

IN WITNESS WHEREOF, the Lessor has hereunto subscribed his name and Lisbon Valley Uranium Company has caused its name to be hereunto subscribed by James M. Knowles, its Chairman of the Board, thereunto duly authorized, the day and year first above written.

S/ John A. Smith
Lessor

LISBON VALLEY URANIUM COMPANY

By S/ Jas. M. Knowles
Chairman of the Board

Attest:

S/ Melvin F. Schroeder
Secretary

Lessee

STATE OF COLORADO)
CITY AND)ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 13th day of July, 1956, by John A. Smith.

Witness my hand and official seal.
My commission expires September 16, 1957.

S/ Josephine Burger
Notary Public

STATE OF COLORADO)
CITY AND)ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 14 day of July by James M. Knowles as its Chairman of the Board, and S/ Melvin F. Schroeder as Secretary of Lisbon Valley Uranium Company, a Colorado corporation.

Witness my hand and official seal.
My commission expires September 16, 1957

S/ Josephine Burger
Notary Public

ANNEX A

Attached to and forming a part of "Mining Lease and Option" dated July 13, 1956, granted by JOHN A. SMITH, Lessor to LIBRON VALLEY URANIUM COMPANY, a Colorado Corporation, Lessee, covering mining property in Clear Creek County, Colorado.

All that part of the Dives Lode Mining Claim known as Survey Lot No. 98.

All that part of the Bell Weather Lode Mining Claim known as Survey Lot No. 250.

All that part of the Pelican Lode Mining Claim known as Survey Lot No. 134.

All that part of the Zillah Lode Mining Claim known as Survey Lot No. 117.

All that part of the Unicorn Lode Mining Claim known as Survey Lot No. 208.

All that part of the Lancaster Lode Mining Claim known as Survey Lot No. 431, and

All that part of the Eagle Bird Lode Mining Claim known as Survey Lot No. 63 lying westerly from a line drawn at the west end line of the Dives discovery shaft at right angles to the said side lines of said Dives Lode Survey Lot No. 98.

The Illinois	Lode Mining Claim, Survey Lot No. 892.
The Bertha	Lode Mining Claim, Survey Lot No. 1698
The Jerome	Lode Mining Claim, Survey Lot No. 9159
The Western Union	Lode Mining Claim, Survey Lot No. 7281
The Waverly	Lode Mining Claim, Survey Lot No. 7281
The Andes	Lode Mining Claim, Survey Lot No. 7281
The Ontario	Lode Mining Claim, Survey Lot No. 9987
The New York	Lode Mining Claim, Survey Lot No. 9987
The Hardscrabble	Lode Mining Claim, Survey Lot No. 9987
The Minnie	Lode Mining Claim, Survey Lot No. 9987
The London	Lode Mining Claim, Survey Lot No. 9987
The Paris	Lode Mining Claim, Survey Lot No. 9987
The Rome	Lode Mining Claim, Survey Lot No. 9987
The Hercules	Lode Mining Claim, Survey Lot No. 112
The Seven-Thirty	Lode Mining Claim, Survey Lot No. 136
The John J. Roe	Lode Mining Claim, Survey Lot No. 134
The John J. Roe	Lode Mining Claim, Survey Lot No. 212
The Pio Nino	Lode Mining Claim, Survey Lot No. 772
The Maggie	Lode Mining Claim, Survey Lot No. 1012
The Jennie	Lode Mining Claim, Survey Lot No. 1017
The Willihan	Lode Mining Claim, Survey Lot No. 1024
The Dolly Verden	Lode Mining Claim, Survey Lot No. 1196
The John H. Wilson	Lode Mining Claim, Survey Lot No. 1206
The Clifford	Lode Mining Claim, Survey Lot No. 1217
The Cora B	Lode Mining Claim, Survey Lot No. 1337
The Stella	Lode Mining Claim, Survey Lot No. 1665
The Buckskin Griffin	Lode Mining Claim, Survey Lot No. 1819
The Brand Hall	Lode Mining Claim, Survey Lot No. 1824
The Canned Fruit	Lode Mining Claim, Survey Lot No. 1825
The Exposition	Lode Mining Claim, Survey Lot No. 1845
The Lady Cunning	Lode Mining Claim, Survey Lot No. 1848
The El Mahdi	Lode Mining Claim, Survey Lot No. 2186
The Komeroff	Lode Mining Claim, Survey Lot No. 2187
The Herat	Lode Mining Claim, Survey Lot No. 2191
The Salisbury	Lode Mining Claim, Survey Lot No. 2196
The Ameer	Lode Mining Claim, Survey Lot No. 2233
The Candahar	Lode Mining Claim, Survey Lot No. 2238
The Winona	Lode Mining Claim, Survey Lot No. 2274
The Lady Maud	Lode Mining Claim, Survey Lot No. 2275

S/ John A. Smith

The Cabul	Lode Mining Claim,	Survey Lot No. 2284
The Silver Queen	Lode Mining Claim,	Survey Lot No. 2291
The Merv	Lode Mining Claim,	Survey Lot No. 2298
The Albion	Lode Mining Claim,	Survey Lot No. 5234
The Cymri	Lode Mining Claim,	Survey Lot No. 5234
The Gibralter	Lode Mining Claim,	Survey Lot No. 5186
The Emerson	Lode Mining Claim,	Survey Lot No. 5186
The Afghan	Lode Mining Claim,	Survey Lot No. 5352
The Quetta	Lode Mining Claim,	Survey Lot No. 5352
The Fell Wall	Lode Mining Claim,	Survey Lot No. 1357
The Wreckin	Lode Mining Claim,	Survey Lot No. 1351
The Bismark	Lode Mining Claim,	Survey Lot No. 1383
The Independence	Lode Mining Claim,	Survey Lot No. 1671
The Bohemia	Lode Mining Claim,	Survey Lot No. 2297
The Fitspatrick	Lode Mining Claim,	Survey Lot No. 6281

Also the Silver Calf Lode Mining Claim, Survey Lot No. 1820, excepting that certain fractional part heretofore conveyed to J. M. S. Egan, by deed April 10th, 1883.

The Edwina Lode Mining Claim, Survey Lot No. 2290, excepting that certain frantional part heretofore conveyed to John M. Frazier by deed dated June 18th, 1886.

The McLin Lode Mining Claim, Survey Lot No. 1384, excepting that certain fractional part heretofore conveyed and described in deed recorded in Book 60, page 21, in the office of the Clerk and Recorder of Clear Creek County.

The Cataract Lode Mining Claim, Survey Lot No. 1432, excepting that certain fractional part heretofore conveyed and described in deed recorded in Book 70, page 301, of said office.

Also the West 575 feet of the J. Q. A. Nadenbousch Lode Mining Claim, Survey Lot No. 780.

The West half of the Rolland Lode Mining Claim, Survey Lot No. 1115.

Also the undivided seven-eights of the Brunswick Lode Mining Claim, Survey Lot No. 1401.

Also the undivided one-third of the St. Joe Lode Mining Claim, Survey Lot No. 184.

The Little Nora Lode Mining Claim	Survey Lot No. 1938
The undivided one-fourth of the Marion Lode Mining Claim,	Survey Lot No. 1722
The Little Jo Lode Mining Claim,	Survey Lot No. 1937

The Boom	Lode Mining Claim,	Survey Lot No. 9538
The Burr	Lode Mining Claim,	Survey Lot No. 946
The Isinglass	Lode Mining Claim,	Survey Lot No. 878
The West Hercules	Lode Mining Claim,	Survey Lot No. 140
The John F. McClung	Lode Mining Claim,	Survey Lot No. 135
The Alps	Lode Mining Claim,	Survey Lot No. 893
The Kirkling	Lode Mining Claim,	Survey Lot No. 976

The East 220 feet of the West Rip Van Winkle Lode Mining Claim, Survey Lot No. 1117.

That certain tunnel known as the Hercules Tunnel

That certain tunnel known as the Stump Tail Tunnel

The Montezuma Lode Mining Claim, Survey Lot No. 916, excepting that point of rocks upon which the remains of the brother of Henage M. Griffin are buried, and which is marked by a tombstone, and the approaches thereto from the adjacent wagon road.

S/ John A. Smith

The Snodgrass or Paul Tunnel.

The Pelican Tunnels numbered 1, 2 and 2½.

The right and privilege of dumping upon and across the surface ground of the east three hundred and fifty feet of the Montreal Lode Mining Claim, from any and all lodes and tunnels used or to be used in working the group of lodes commonly known as the Seven-Thirty Mines lying above the Montreal claim, with the privilege of entering thereon and erecting, maintaining and using tramways and retaining walls; and being the same rights and privileges granted to Eenage H. Griffin by the Montreal Gold and Silver Mining Company by deed dated March 26, A. D. 1884, and found of record in Book 79, page 332, of the public records in the office of the Clerk and Recorder of Clear Creek County.

Also that certain Placer Claim designated as Survey Lot No. 686 and containing 19.01 acres of land more or less, with all improvements thereon.

That certain Millsite and water power designated as Survey Lot No. 330, with all improvements thereon, excepting, however, so much of said Survey Lot No. 330 as is described by metes and bounds as follows: Beginning at the corner No. 3 of said Survey Lot No. 330, thence South 9 degrees fifteen minutes East 368.4 feet; thence North 80 degrees and forty-five minutes East 150 feet; thence North 9 degrees fifteen minutes West 368.4 feet; thence South 80 degrees forty-five minutes West 150 feet to the point or place of beginning.

That certain Millsite designated as Survey Lot No. 342, and also that certain right of way through and across Survey Lot No. 340 as described in deed found of record in Book 41, page 235, of the records in the office of the Clerk and Recorder of Clear Creek County, with all improvements thereon.

Also Millsite Survey Lot No. 311, consisting of 1½ acres, more or less, and a two-thirds interest in the dam thereon situated, and the right to construct a ditch across Millsite Survey Lot No. 301, excepting, however, from Survey Lot No. 301 and 311 the property described in that certain deed dated April 18, A. D. 1877, and found of record in Book 41, page 235, in the office of the Clerk and Recorder of Clear Creek County.

That certain Tunnel known as and called the Burleigh Tunnel.

The Alice Millsite, the location certificate of which is recorded in Book 131, page 479, in the office of the Clerk and Recorder of Clear Creek County.

Also the following Lode Mining Claims:

The Mary Rogers	Lode Mining Claim, Survey Lot No. 17761
The Fowler	Lode Mining Claim, Survey Lot No. 17761
The Leonard	Lode Mining Claim, Survey Lot No. 17731
The Dupuy	Lode Mining Claim, Survey Lot No. 17761
The Evergreen	Lode Mining Claim, Survey Lot No. 964
The Confidence	Lode Mining Claim, Survey Lot No. 1894
The Bernard	Lode Mining Claim, Survey Lot No. 17761
The Hathaway	Lode Mining Claim, Survey Lot No. 17761
The Irene	Lode Mining Claim, Survey Lot No. 17730

Also the following Lode Mining Claims on which no patent has been secured:

S/ John A. Smith

The Horrible
The Big Gun
The Cossack
The Wild West
The Manhattan
The New Era
The Advance
The Hunt
The Ryder
The I. Phillips

The Monnie Millsite, Survey Lot No. 19610. This property is included in the deed from J. N. Robeson and C. L. Cole to Silver Plume Mines Company, recorded in Book 193 at page 567, in the office of the Clerk and Recorder of Clear Creek County, Colorado. Also, the undivided two-thirds of the St. Joe Lode Mining Claim, Survey Lot No. 184, being the same premises conveyed to the East Butte Copper Mining Company by deed from Raymond C. Gee and Gordon P. Henderson, by deed dated June 14, 1935.

All of Lot 5, in Block 14 in the Town of Silver Plume, together with the improvements situated thereon.

Also, all of that portion of Lots numbered 3 and 4, Block 14, in said Town of Silver Plume, described as follows, to-wit: Beginning at the southwest corner of said lot, thence north 23°15'W. 80 feet thence north 66°48' east 50 feet, thence south 23°15' east 55 feet to a point of 35 feet from the southeast corner of said lot, thence southerly across said lot to the place of beginning, containing in all 5975 square feet, according to the approved plat and survey of said county and townsite, also including the triangular piece of ground therein being a part of the Hocage Millsite, U. S. Survey Lot No. 836B, all being contained within the aforementioned Lot 4 in said Block 14, together with all improvements situated thereon.

North 73 feet of Lot 1 and improvements, Block 16, Hocage Millsite (2.03) acres more or less, Survey Lot No. 836B; all situate in the town of Silver Plume.

Dunkirk Lode Mining Claim, Survey Lot No. 200; James A. Guage Lode Mining Claim, Survey Lot No. 201; and Perralto Lode Mining Claim, Survey Lot No.

Together with all tenements, hereditements and appurtenances appertaining or in any wise belonging to the above described real estate; all buildings, mills, power plants, water wheels and improvements situated upon said real estate; all water rights belonging to or connected with the above described mining claims and real estate; and all rights of way and easements running with, belonging to or connected with such real estate, including but not restricted to that certain 50,000 foot right of way granted by the Territory of Kansas and approved by the United States.

Anna J. Lode Mining Claim, Survey Lot No. 866A;
Corry City Lode Mining Claim, Survey Lot No. 344;
Concord Lode Mining Claim, Survey Lot No. 2214;
Diamond Tunnel No. 8 Lode Mining Claim, Survey Lot No. 1019;
Diamond Tunnel No. 9 Lode Mining Claim, Survey Lot No. 982;
East 900 feet, Selkirk Lode Mining Claim, Survey Lot No. 868;
The undivided three-fourths of West E. K. Baxter Sulphuret
Lode Mining Claim, Survey Lot No. 1363;
Millsite, Survey Lot No. 718;
Abner G., Addie M., Charlie O., Col. Phipps, Col Barry, C.S.D., Eugene M., Flack, L. A. D., Lantz, McComas, and Maj. Kummer Lode Mining Claims, all Survey Lot No. 9731;
Moore Lode Mining Claim, Survey Lot No. 1109;
Silver Link Lode Mining Claim, Survey Lot No. 1890;
Wisconsin Lode Mining Claim, Survey Lot No. 919;
The Diamond Tunnel with track and improvements;

S/ John A. Smith

RECEIVED
OCT - 1 1956

FIRST SUPPLEMENT TO MINING LEASE AND OPTION

This First Supplement to Mining Lease and Option, made and entered into this 16th day of July, 1956, by and between JOHN A. SMITH, of Silver Plume, Colorado, hereinafter called "Lessor," and LISBON VALLEY URANIUM COMPANY, a Colorado corporation, hereinafter called "Lessee,"

WITNESSETH: That

WHEREAS, the parties desire to clarify certain provisions of the Mining Lease and Option entered into by the parties on July 13, 1956, covering all mining properties in Clear Creek County, Colorado, owned by John A. Smith on said date; now therefore

THE PARTIES MUTUALLY AGREE AS FOLLOWS:

With reference to paragraph 2, it is agreed that in case the Lessee shall be merged or consolidated with another corporation, no consent of the Lessor shall be required in connection with the acquisition of this lease by the surviving corporation.

With reference to paragraph 6, it is agreed that the portion of the 1956 taxes to be paid by the Lessor shall be computed on the basis of the taxes for 1955.

With reference to paragraph 18, it is agreed that the Lessee shall not be under any obligation to dispossess occupants of the surface who do not claim mineral rights.

With reference to paragraph 13, it is agreed that if Lessor shall do work under the right reserved in paragraph 13, the Lessor shall save and keep harmless the Lessee from all accidents to the Lessor, his employees, licensees, agents, associates and visitors, in connection with such work.

IN WITNESS WHEREOF, the Lessor has hereunto subscribed his name and Lisbon Valley Uranium Company has caused its name to to be hereunto subscribed by James M. Knowles, its Chairman of the Board, thereupon duly authorized, the day and year first above written.

S/ John A. Smith
Lessor

LISBON VALLEY URANIUM COMPANY

By S/ Jas. M. Knowles
Chairman of the Board

Attest:

S/ Melvin F. Schroeder
Secretary

STATE OF COLORADO)
CITY AND)
COUNTY OF DENVER)ss.

The foregoing instrument was acknowledged before me this 16th day of July, 1956, by John A. Smith.

Witness my hand and official seal.
My commission expires September 16, 1957.

S/ Josephine Burger
Notary Public

STATE OF COLORADO)
CITY AND)ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 24th day of July, by James M. Knowles as its Chairman of the Board, and Melvin F. Schroeder as Secretary of Lisbon Valley Uranium Company, a Colorado corporation.

Witness my hand and official seal.
My commission expires February 15, 1958

S/ Judy Lynch
Notary Public

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

Sept. 24, 1956

[illegible] New Customhouse
Denver 2, Colorado

Lisbon Valley Uranium Corporation
[illegible] Gatbridge Building
Denver, Colorado

Re: Docket No. [illegible] (Lease-Line)
Mike Vincon and Fred Harris
Chatauqua Mine
Summit County, Colorado
Contract No. [illegible]

Gentlemen:

According to our information, Messrs. Mike Vincon and Fred Harris of Breckenridge, Colorado, sold to the Manhattan Uranium Corporation their interests in the following land:

> Patented Chatauqua Lode U. S. Survey No. [illegible]; and unpatented claims Protection Lode Nos. 1, 2, and 3, recorded in Book [illegible], page [illegible], County Clerk and Recorder's Office, Summit County, Breckenridge, Colorado.

We also understand that the Manhattan Uranium Corporation has sought with your Company and that the above-mentioned lands have been leased by you to Anne Uranium Mines, which has been producing ore therefrom.

Under date of April 15, 1953, Messrs. Vincon and Harris, as Operator, entered into Exploration Project Contract [illegible] (Docket No. [illegible]) with Defense Minerals Exploration Administration pursuant to which the Government loaned to the Operator the sum of $[illegible], representing 50% of the costs of mineral exploration conducted by Messrs. Vincon and Harris on that land. By the terms of that Contract, as amended, the Government is entitled to receive royalty on any minerals produced from the above-mentioned land between April 15, 1953, and April 15, 1954, until royalties of $[illegible] have been paid. Article 6(a) of the Contract further provides: "To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described....., and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid."

mailed in field

Accordingly, you are advised that the Government has a lien on the land, and on all minerals produced therefrom, to the extent of its above-mentioned royalty claim. The Government will accept royalty payments on this claim from your Company, from your lessees, or from Messrs. Vinson and Harris, in discharge of the royalty obligation, and copies of this letter are being sent to each of the parties mentioned herein.

It is further requested that this office be supplied with a copy of each sales agreement, deed, lease, or other instrument by which the above-mentioned lands have been transferred or leased by each of the above-mentioned persons and Companies.

Please advise us as to what arrangements you will make to satisfy the Government's royalty claim.

Payments should be made to this office, by check drawn payable to the Defense Minerals Exploration Administration. The purchaser of any ore or minerals produced from this land should be advised to deduct royalties from the amount due on each shipment and forward the checks to this office. All royalty payments should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of ore sold, the name of the purchaser, and the price and charges certified to be correct by the purchaser.

This office should be advised also of any changes in ownership or production rights that may have any bearing on the Government's right to its percentage royalty. Also, if production ceases at any time for any extended period, this office should be notified at six-month intervals that no production has been made.

Sincerely yours,

W. N. Trever
Executive Officer, DMEA
Field Team, Region III

FIndrits/wag
September 12, 1956
Copy to: DMEA Docket
Operating Com. (2)
WNTrever
Marshman
Shaw
Townsend
RFDuyer (W.O.)
FIndritz (W.O.)
Corres. 2509
Pending
Chron.

Montezuma Uranium Corporation
Anne Uranium Mines
Messrs. Mike Vinson and Fred Harris

Betty Griswold

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

September 24, 1956

Re: DMEA 4462; Lead-zinc;
$110,520
Lisbon Valley Uranium Co.,
Denver
Silver Plume Mines
Clear Creek County, Colo.

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, Branch of Base Metals

Subject: Application of September 7, received September 12, 1956.

The applicant has obtained a lease with purchase option on a considerable part of the mining properties in the Silver Plume area, chief among which are the Pelican-Dives mine, the Corry, the Bismarck and Seven-Thirty mines. The Burleigh and Diamond tunnels, begun before World War I, were driven to provide drainage, and to develop ore at depth beneath these mines, but apparently failed in this objective or were incomplete as there has been little or no ore extracted since about 1914.

The applicant proposes exploration from the Burleigh and Diamond tunnel levels which includes 2,000 feet of drifting and crosscutting; retimbering of caved sections, pumping from the Ricci winze and 7,500 feet of core drilling.

It would appear that a field examination is necessary to evaluate the merit of the several elements making up the project. It would appear that complete level maps and assay records would be of material help in evaluating the structures proposed for exploration.

I doubt that drifting and core drilling can be done for $20.00 and $2.00 per foot respectively, and would suggest that these estimates be revised in line with current costs.

O. M. Bishop

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

RECEIVED
SEP 25 1956

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

September 24, 1956

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$110,520
Lisbon Valley Uranium Co.,
Denver
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O. M. Bishop

O. M. Bishop

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Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

RECEIVED
SEP 25 1956

IN REPLY REFER TO:

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

RECEIVED
SEP 17 1956

Betty Griswold

September 14, 1956

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 4462, Lisbon Valley Uranium Company, Silver Plume mines, Clear Creek County, Colorado, (lead, zinc).

The applicant proposes to explore for lead-zinc-silver ore deposits on some of the old Silver Plume properties. The work would consists of dewatering some of the old mine workings, retimbering 1,550 linear feet of old workings, driving 2,000 feet of new drifts and crosscuts, and 7,500 feet of core drilling from underground stations.

A large amount of mining was done on the subject properties some 50 to 60 years ago. Large parts of the old workings are now caved, and it is not possible to determine from the application just how much of the old drifts are accessible. The main problem, of course, is to determine the probability of the presence of extensions of the old veins and lodes.

Old reports, notably U.S.G.S. Professional Paper No. 63, 1906, give much information concerning the geology and structure of the district. The lodes and veins are reported to be formed along slip, shear, and fault planes. If this is true, the strength and continuity of such structures should be evaluated in the field. I recommend that the application be referred to the Field Team for examination and report.

The applicant states he has miners at work on the property retimbering and rehabilitating parts of the old workings. It does not seem unreasonable to expect the applicant to make the take-off points for the various projects accessible, clean, and free for the purposes of examination by the Government engineer and geologist. To do that might entail some dewatering and retimbering on the part of the applicant.

W. P. Williams

W. P. Williams

IN REPLY REFER TO:

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

RECEIVED
SEP 17 1956

September 14, 1956

Memorandum

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WPWilliams:btr
G 9/14/56
cc: ~~XXXXXXXXXXXXXXXX~~
~~XXXXXXXXXXXXXXXX~~ G.M.Bishop, 3617
Director's reading file (4212) W. P. Williams
Branch reading file (4212)
DMEA (3) Chron. file. Docket file

Selfridge
KFJohnson

SEP 14 1956

Docket
Alt
Transmitted
Betty

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4462 (Lead-Zinc)
Lisbon Valley Uranium Company
Divee-Pelican mine
Clear Creek County, Colorado

Dear Mr. Traver:

It will be appreciated if you will send Washington an extra copy of your memorandums transmitting three copies of applications in those cases where the memorandums contain geological or other information which would be of interest to the commodity members, as in the subject case. By doing this, we will not have to make copies for third copies of the applications.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Approved:

Frank D. Lamb (FDL)
Member, Bureau of Mines

Thor H. Kiilsgaard (THK)
Member, Geological Survey

GCSelfridge/esf (9/13/56)
cc to: Docket
Admr. R. File
Operating Committee
Messrs: FDLamb, USBM
THKiilsgaard, USGS
Selfridge

R.C.B.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

September 12, 1956

Lisbon Valley Uranium Company
501 Kittredge Building
Denver, Colorado

Subject: DMEA-4462
Re: Exploration Assistance
Dives-Pelican Mine

Gentlemen

Your application for exploration assistance, dated September 7, 1956 submitted to our office at Denver, has been assigned Docket Number DMEA-4462 and referred to the Base Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Chief
Operations Control and
Statistics Division

Copy to:

Region III - Denver, Colorado
Code 500

3571

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

RECEIVED
SEP 12 1956

224 New Customhouse
Denver 2, Colorado

September 10, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Lead-Zinc), Lisbon Valley Uranium Company (Dives-Pelican mine), Clear Creek County, Colorado.

Enclosed are three copies of the subject application in the amount of $110,520.00. One copy of the application is being retained in our file.

The property covered by this application is the same as that covered by Docket No. DMEA 1173X (Lead-Zinc), John A. and Ben A. Smith, Contract No. I-DMA-E37. On January 13, 1954, this contract was mutually terminated. We have not been advised by the owner and former Operator of his disposition of this property.

It might be interesting to note that the Lisbon Valley Uranium Company is now also the owner of the claims covered by DMEA Docket No. 2160 (Lead-Zinc), Contract No. Idm-E509, Mike Vinson and Fred Harris (Chatauqua mine), Summit County, Colorado, which property at present is under lease to the Acme Uranium Mines.

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver
Executive Officer

Enclosures

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

RECEIVED
SEP 18 1956

224 New Customhouse
Denver 2, Colorado

September 10, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Lead-Zinc), Lisbon Valley Uranium Company (Rives-Pelican mine), Clear Creek County, Colorad.

Enclosed are three copies of the subject application in the amount of $110,520.00. One copy of the application is being retained in our file.

The property covered by this application is the same as that covered by Docket No. DMEA 1173X (Lead-Zinc), John A. and Ben A. Smith, Contract No. I-DMA-837. On January 13, 1954, this contract was mutually terminated. We have not been advised by the owner and former Operator of his disposition of this property.

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DMEA Field Team, Region III

By W. M. Traver
W. M. Traver
Executive Officer

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

SEP 12 1956

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

DMEA
DEPARTMENT OF THE INTERIOR
SEP 7 1956
REGION III
DENVER, COLORADO

Not to be filled in by applicant

Docket No. 4462
Metal or Mineral Lead-Zinc
Date Received 9-12-56
Estimated Cost $110,520
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:

Lisbon Valley Uranium Company (a corporation)
501 Kittredge Building
Denver, 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. - attached

(*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 attached.

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

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

(*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. attached

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

(*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.

5. *The exploration project.*—State the mineral or minerals for which you wish to explore silver, lead zinc

(*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 15 days and be completed within 12 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)? Yes

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

[X] Money [X] 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 September 7, 1956

LISBON VALLEY URANIUM COMPANY
(Applicant)

By Wilder H Brinton

President

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

Lisbon Valley Uranium Company
501 Kittredge Building
Denver 2, Colorado

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1. (c)	James M. Knowles 140 Hall Street Grand Junction, Colorado	Chairman of Board of Directors
	Wilder H. Brinton P. O. Box 365 Moab, Utah	President and Director
	Albert T. Fischer P. O. Box 373 Grand Junction, Colorado	Vice-President and Director
	Melvin F. Schroeder 1820 Appleweed Drive Lakewood, Colorado	Secretary-Treasurer and Director
	Grover E. Williams 932 South Second Montrose, Colorado	Director
	Dell E. Litz 180 Ivanhoe Denver, Colorado	Director

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3. Applicant's property rights

(a) The mine is located in Section 13 and 14 Township 4 South R 75W about 50 miles west of Denver, Colorado along U. S. Highway No. 6 at Silver Plume, Colorado. The Property consists of the consoladation of the Seven-Thiry, Bismark, Dives-Pelican, Wisconsin, Corry City and Dunkirk mines and also the Burleigh and Diamond Tunnels. The property consists of the following claims, millsites and tunnels:

All that part of the Dives Lode Mining Claim known as Survey Lot No. 98.

All that part of the Pelican Lode Mining Claim known as Survey Lot No. 134.

All that part of the Zillah Lode Mining Claim known as Survey Lot no. 117.

All that part of the Unicorn Lode Mining Claim known as Survey Lot No. 208.

All that part of the Lancaster Lode Mining Claim known as Survey Lot No. 431, and

All that part of the Eagle Bird Lode Mining Claim known as Survey Lot No. 63 lying westerly from a line drawn at the west end line of the Dives discovery shaft at right angles to the said side lines of said Dives Lode Survey Lot No. 98.

The Illinois	Lode Mining Claim, Survey Lot No. 892
The Bertha	Lode Mining Claim, Survey Lot No. 1698
The Jerome	Lode Mining Claim, Survey Lot No. 9159
The Western Union	Lode Mining Claim, Survey Lot No. 7281
The Waverly	Lode Mining Claim, Survey Lot No. 7281
The Andes	Lode Mining Claim, Survey Lot No. 7281
The Ontario	Lode Mining Claim, Survey Lot No. 9987
The New York	Lode Mining Claim, Survey Lot No. 9987
The Hardscrabble	Lode Mining Claim, Survey Lot No. 9987
The Minnie	Lode Mining Claim, Survey Lot No. 9987
The London	Lode Mining Claim, Survey Lot No. 9987
The Paris	Lode Mining Claim, Survey Lot No. 9987
The Emma	Lode Mining Claim, Survey Lot No. 9987
The Hercules	Lode Mining Claim, Survey Lot No. 112
The Seven-Thiry	Lode Mining Claim, Survey Lot No. 136
The John J. Roe	Lode Mining Claim, Survey Lot No. 134
The John J. Roe	Lode Mining Claim, Survey Lot No. 212
The Pio Nino	Lode Mining Claim, Survey Lot No. 772
The Maggie	Lode Mining Claim, Survey Lot No. 1012
The Jennie	Lode Mining Claim, Survey Lot No. 1017
The Willihan	Lode Mining Claim, Survey Lot No. 1024
The Dolly Verden	Lode Mining Claim, Survey Lot No. 1196
The John M. Wilson	Lode Mining Claim, Survey Lot No. 1206
The Clifford	Lode Mining Claim, Survey Lot No. 1217
The Cora B	Lode Mining Claim, Survey Lot No. 1337
The Stella	Lode Mining Claim, Survey Lot No. 1665
The Buckskin Griffin	Lode Mining Claim, Survey Lot No. 1819
The Brand Hall	Lode Mining Claim, Survey Lot No. 1824
The Canned Fruit	Lode Mining Claim, Survey Lot No. 1825
The Exposition	Lode Mining Claim, Survey Lot No. 1845
The Lady Cunning	Lode Mining Claim, Survey Lot No. 1848
The El Mahdi	Lode Mining Claim, Survey Lot No. 2186
The Komereff	Lode Mining Claim, Survey Lot No. 2187
The Herat	Lode Mining Claim, Survey Lot No. 2191
The Salisbury	Lode Mining Claim, Survey Lot No. 2196
The Ameer	Lode Mining Claim, Survey Lot No. 2233

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The Candahar	Lode Mining Claim, Survey Lot No. 2238
The Winona	Lode Mining Claim, Survey Lot No. 2274
The Lady Maud	Lode Mining Claim, Survey Lot No. 2275
The Cabul	Lode Mining Claim, Survey Lot No. 2284
The Silver Queen	Lode Mining Claim, Survey Lot No. 2291
The Merv	Lode Mining Claim, Survey Lot No. 2298
The Albion	Lode Mining Claim, Survey Lot No. 5234
The Cymri	Lode Mining Claim, Survey Lot No. 5234
The Gibralter	Lode Mining Claim, Survey Lot No. 5186
The Emerson	Lode Mining Claim, Survey Lot No. 5186
The Afghan	Lode Mining Claim, Survey Lot No. 5352
The Quetta	Lode Mining Claim, Survey Lot No. 5352
The Pell Wall	Lode Mining Claim, Survey Lot No. 1357
The Wreckin	Lode Mining Claim, Survey Lot No. 1351
The Bismark	Lode Mining Claim, Survey Lot No. 1383
The Independence	Lode Mining Claim, Survey Lot No. 1671
The Bohemia	Lode Mining Claim, Survey Lot No. 2297
The Fitzpatrick	Lode Mining Claim, Survey Lot No. 6281

Also the Silver Calf Lode Mining Claim, Survey Lot No. 1820, excepting that certain fractional part heretofore conveyed to J. M. S. Egan, by deed April 10th, 1883.

The Edwina Lode Mining Claim, Survey Lot No. 2290, excepting that certain fractional part heretofore conveyed to John M. Frazier by deed dated June 18th, 1886.

The McLin Lode Mining Claim, Survey Lot No. 1384, excepting that certain fractional part heretofore conveyed and described in deed recorded in Book 60, page 21, in the office of the Clerk and Recorder of Clear Creek County.

The Cataract Lode Mining Claim, Survey Lot No. 1432, excepting that certain fractional part heretofore conveyed and described in deed recorded in Book 70, page 301, of Said office.

Also the West 575 feet of the J. Q. A. Nadenbousch Lode Mining Claim, Survey Lot No. 780.

The West half of the Rolland Lode Mining Claim, Survey Lot No. 1115.

Also the undivided seven-eights of the Brunswick Lode Mining Claim, Survey Lot No. 1401.

Also the undivided one-third of the St. Joe Lode Mining Claim, Survey Lot No. 184.

The Little Horn Lode Mining Claim	Survey Lot No. 1938
The Undividen one-fourth of the Marion Lode Mining Claim,	Survey Lot No. 1722
The Little Jo Lode Mining Claim,	Survey Lot No. 1927

The Boom	Lode Mining Claim, Survey Lot No. 9338
The Burr	Lode Mining Claim, Survey Lot No. 946
The Isinglass	Lode Mining Claim, Survey Lot No. 878
The West Hercules	Lode Mining Claim, Survey Lot No. 140
The John F. McClung	Lode Mining Claim, Survey Lot No. 135
The Alps	Lode Mining Claim, Survey Lot No. 893
The Kirklington	Lode Mining Claim, Survey Lot No. 976

The East 220 feet of the West Rip Van Winkle Lode Mining Claim, Survey Lot No. 1117.

That certain tunnel known as the Hercules Tunnel

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That certain tunnel known as the Stump Tail Tunnel.

The Montezuma Lode Mining Claim, Survey Lot No. 916, excepting that point of rocks upon which the remains of the brother of Menage M. Griffin are buried, and which is marked by a tombstone, and the approaches thereto from the adjacent wagon road.

The Snodgrass or Paul Tunnel.

The Pelican Tunnels numbered 1, 2 and 2½.

The right and privilege of dumping upon and across the surface ground of the east three hundred and fifty feet of the Montreal Lode Mining Claim, from any and all lodes and tunnels used or to be used in working the group of lodes commonly known as the Seven-Thirty Mines lying above the Montreal claim, with the privilege of entering thereon and erecting, maintaining and using tramways and retaining walls; and being the same rights and privileges granted to Menage M. Griffin by the Montreal Gold and Silver Mining Company by deed dated March 26, A. D. 1884, and found of record in Book 79, page 332, of the public records in the office of the Clerk and Recorder of Clear Creek County.

Also that certain Placer Claim designated as Survey Lot No. 686 and containing 19.01 acres of land more or less, with all improvements thereon.

That certain Millsite and water power designated as Survey Lot No. 330, with all improvements thereon, excepting, however, so much of said Survey Lot No. 330 as is described by metes and bounds as follows: Beginning at the corner No. 3 of said Survey Lot No. 330, thence South 9 degrees fifteen minutes East 368.4 feet; thence North 80 degrees and forty-five minutes east 150 feet; thence North 9 degrees fifteen minutes West 368.4 feet; thence South 80 degrees forty-five minutes West 150 feet to the point or place of beginning.

That certain Millsite designated as Survey Lot No. 342, and also that certain right of way through and across Survey Lot No. 340 as described in deed found of record in Book 41, page 235, of the records in the office of the Clerk and Recorder of Clear Creek County, with all improvements thereon.

Also Millsite Survey Lot No. 311, consisting of 1½ acres, more or less, and a two-thirds interest in the dam thereon situated, and the right to construct a ditch across Millsite Survey Lot No. 301, excepting, however, from Survey Lot No. 301 and 311 the property described in that certain deed dated April 18, A. D. 1877, and found of record in Book 41, page 235, in the office of the Clerk and Recorder of Clear Creek County.

That certain Tunnel known as and called the Burleigh Tunnel.

The Alice Millsite, the location certificate of which is recorded in Book 131, page 479, in the office of the Clerk and Recorder of Clear Creek County.

Also the following Lode Mining Claims:

The Mary Rogers	Lode Mining Claim, Survey Lot No. 17761
The Fowler	Lode Mining Claim, Survey Lot No. 17731
The Leonard	Lode Mining Claim, Survey Lot No. 17731
The Dupuy	Lode Mining Claim, Survey Lot No. 17761
The Evergreen	Lode Mining Claim, Survey Lot No. 964
The Confidence	Lode Mining Claim, Survey Lot No. 1894
The Bernard	Lode Mining Claim, Survey Lot No. 17761
The Hathaway	Lode Mining Claim, Survey Lot No. 17761
The Irene	Lode Mining Claim, Survey Lot No. 17720

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Also the following Lode Mining Claims on which no patent has been secured:

The Horrible	The New Era
The Big Gun	The Advance
The Cossack	The Hunt
The Wild West	The Ryder
The Manhattan	The I. Phillips

The Mennie Millsite, Survey Lot No. 19610. This property is included in the deed from J. N. Robeson and G. L. Cole to Silver Plume Mines Company, recorded in Book 193 at page 567, in the office of the Clerk and Recorder of Clear Creek County, Colorado. Also, the undivided two-thirds of the St. Joe Lode Mining Claim, Survey Lot No. 184, being the same premises conveyed to the East Butte Copper Mining Company by deed from Raymond C. Gee and Gordon P. Henderson, by deed dated June 14, 1930.

All of Lot 5, in Block 14 in the Town of Silver Plume, together with the improvements situated thereon.

Also, all that portion of Lots numbered 3 and 4, Block 14, in said Town of Silver Plume, described as follows, to-wit: Beginning at the southwest corner of said Lot, thence north 23°15'W. 80 feet thence north 66°48' east 50 feet, thence south 23°15' east 58 feet to a point of 35 feet from the southeast corner of said lot, thence southerly across said lot to the place of beginning, containing in all 5975 square feet, according to the approved plat and survey of said county and townsite, also including the triangular piece of ground therein being a part of the Hosage Millsite, U. S. Survey Lot No. 836B, all being contained within the aforementioned Lot 4 in said Block 14, together with all improvements situated thereon.

North 73 feet of Lot 1 and improvements, Block 16, Hosage Millsite (2.03) acres more or less, Survey Lot No. 836B; all situated in the town of Lilver Plume,.

Dunkirk Lode Mining Claim, Survey Lot No. 200; James A. Guage Lode Mining Claim, Survey Lot No. 201; and Perralto Lode Mining Claim, Survey Lot No.

Together with all tenements, hereditaments and appurtenances appertaining or in any wise belonging to the above described real estate; all buildings, mills, power plants, water wheels and improvements situated upon said real estate; all water rights belonging to or connected with the above described mining claims and real estate; and all rights of way and easements running with, belonging to or connected with such real estate, including but not restricted to that certain 50,000 foot right of way granted by the Territory of Kansas and approved by the United States.

Anna J. Lode Mining Claim, Survey Lot No. 886A;
Corry City Lode Mining Claim, Survey Lot No. 344;
Concord Lode Mining Claim, Survey Lot No. 2214;
Diamond Tunnel No. 8 Lode Mining Claim, Survey Lot No. 1019;
Diamond Tunnel No. 9 Lode Mining Claim, Survey Lot No. 982;
East 900 feet, Selkirk Lode Mining Claim, Survey Lot No. 868;
The undivided three-fourths of West E. K. Baxter Sulphuret Lode Mining Claim, Survey Lot No. 1363;
Millsite, Survey Lot No. 718;
Abner G., Addie M., Charlie O., Col. Phipps, Col. Barry C.S.D., Eugene M., Fleck, L.A.D., Lantz, McComas, and Maj. Kummer Lode Mining Claims, all Survey Lot No. 9731;
Moore Lode Mining Claim, Survey Lot No. 1109;
Silver Link Lode Mining Claim, Survey Lot No. 1890;
Wisconsin Lode Mining Claim, Survey Lot No. 919;
The Diamond Tunnel with track and improvements.

(b) The property is now known as Silver Plume Mines and the patented claims are taxed under this name and as John Smith owner.

(c) The Lisbon Valley Uranium Company has a mining lease and option from Mr. John Smith.

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3(d)

MINING LEASE AND OPTION

This Mining Lease and Option, entered into this 13th day of July, 1956, by and between JOHN A. SMITH, of Silver Plume, Colorado, hereinafter called "Lessor," and LISBON VALLEY URANIUM COMPANY, a Colorado corporation, hereinafter called "Lessee,"

WITNESSETH: That

The Lessor, for and in consideration of $2,500.00 paid by the Lessee to the Lessor, receipt whereof is hereby acknowledged, and in consideration of the Lessee's agreement to pay to the Lessor $2,500.00 on August 13, 1956, $2,500.00 on September 13, 1956, and $2,500.00 on October 13, 1956, and in consideration of the rents, royalty, covenants and agreements to be paid, kept and performed by the Lessee, has leased, let and demised, and by these presents does lease, let and demise unto the Lessee those certain mining properties, situate in Clear Creek County, State of Colorado, described in "Annex A" hereto attached.

The list set forth in said "Annex A" is intended to include all mining property in said Clear Creek County which is owned at the date hereof by John A. Smith, sometimes called John Smith. It is agreed that said description is substantially correct, and it is the intent that the Lessee shall have the benefit of all existing rights-of-way, privileges and easements which are incident to the enjoyment of said properties; and that the Lessee shall take subject to all existing contracts affecting extra-lateral rights and boundary lines heretofore made by the Lessor, or by his predecessors, and all easements for the benefit of third parties. If it should be discovered that any description in "Annex A" is inaccurate, then such variations, additions to, and corrections of said description shall be made as are found necessary to reflect the intent of the parties. It is agreed that as to unpatented mining claims, the Lessor makes no warranties or covenants of quiet enjoyment; and there is hereby excluded from this lease and portion of said unpatented claims which may be deeded, relinquished, or lost to the Lessor in settlement of conflicts. All junk metal and machinery now on the premises which is

not useable, and the right to enter and remove same, is reserved to the Lessor.

Term

TO HAVE AND TO HOLD the above described premises for the purpose of mining and for no other purpose, for a term of twenty years from the date hereof, unless sooner forfeited or terminated through violation of any of the covenants and conditions herein contained.

The Lessee, in consideration of the premises, has covenanted, contracted and agreed, and by these presents does covenant, contract and agree with the said Lessor, his heirs and assigns, as follows:

1. Relationship of Parties.

The relationship of the parties hereto is exclusively that of Lessor and Lessee (with option to purchase), and no relationship of partner, joint adventurer or otherwise than Lessor and Lessee (with option to purchase) is intended to be or is created by this agreement; there shall be no privity of contract between the Lessor and any of the employees, licensees, contractors, subcontractors, or sublessees of the Lessee, and all prospecting, development and mining operations hereunder shall be under the sole and exclusive control of the Lessee.

2. Assignment.

It is agreed that this lease and option shall not be assigned by the Lessee without Lessor's written consent first had and obtained.

3. Operations by Lessee.

Lessee shall have the right to work and operate on any and all of the demised property, to mine, extract, take and market ores and minerals therefrom; to treat said ores and minerals in a mill or plant on said property, and to ship or take same to any other plant for treatment, reduction or sale; to erect and operate on said property a plant or plants and other facilities for mining, treating or processing of ores and minerals from said property, or other properties, and for processing of the content thereof into any obtainable products; and generally to do any and all things, which Lessee may deem desirable in connection with the operation of the property. The

Lessee shall have the full right of ingress and egress over, under or through the demised property for prospecting, mining, ventilating and draining adjacent or contiguous land operated by Lessee, and Lessee or any person, firm or corporation working by or under Lessee, or purchasing ore from Lessee, shall have the right to place dumps or other debris on the premises; and Lessee shall have the right, at its election and upon giving notice of its desire so to do, to mine ore from the demised premises through or from adjacent or contiguous premises owned by or held under lease by the Lessee.

4. Work Requirements, or Rent in lieu of Work.

Lessee shall have the right of immediate possession of said properties and shall promptly enter thereon and commence operations hereunder. Prospecting, developing and mining may be done at such places and in such manner as Lessee shall elect. Commencing at a date one month after the date hereof, Lessee shall keep at least seven men continuously employed; failing in which the Lessee may prevent a forfeiture of the lease by paying Lessor a flat rental of $500.00 per month for each month in which the requisite number of men are not employed. To determine the men employed, the total number of shifts worked in any calendar month shall be divided by the number of working days in that month, and the result taken as the number of men employed in that month. If rent becomes payable, the same shall be paid on or before the 15th of the month following the month in which the deficiency occurs.

5. Standard of Work.

All mining operations on the premises shall be conducted in a manner necessary to good and economical mining with due regard to the development and preservation of said mining premises as workable mining properties, and to the special covenants herein contained.

6. Taxes.

Lessee shall pay promptly when due all general taxes and assessments which shall be levied or assessed on said property during the life of this lease, and on any improvements on the demised

property, including machinery thereon or therein. Taxes for 1956 shall be apportioned to the date of this agreement.

7. Workmen's Compensation Insurance.

Lessee shall obtain and pay the premiums for and on insurance policies sufficient to save and protect harmless said Lessor and said Lessee from all liability under the Workmen's Compensation Act of Colorado, and under the Colorado Occupational Disease Disability Act, for and on account of injuries to, disablement of, or death of any of Lessee's employees, mining partners, contractors, or subcontractors, licensees and sublessees, and Lessee agrees to furnish to the Lessor before commencing work, and thereafter, from time to time, satisfactory evidence that such insurance is in full force and effect.

8. Timbers.

Lessee shall well and sufficiently timber, with strong, well-fitted and durable timbers, all the workings through which the Lessee may work, in accordance with good mining, and repair or replace promptly all timbering in said workings which may be rendered insufficient by any cause whatsoever; and shall keep the timbering of said workings at all times in good, safe and serviceable condition.

9. Drainage Etc.

Lessee shall keep at all times all shafts, drifts, tunnels, winzes, and other workings through which the Lessee may work, thoroughly drained and clear of loose rock and rubbish, and in a safe and secure condition, unless prevented by extraordinary mining casualty, and shall maintain at all times and leave the floors of all drifts, crosscuts and other workings in good, even, unobstructed condition; and shall stow no waste underground except in such manner that no drifts, shafts, raises, or other working places shall be obstructed thereby.

10. Underhand Work, Etc.

Lessee shall do no underhand stoping, and shall not do any stoping or mining which will endanger any shaft, except with the written consent of the Lessor.

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11. Dimensions of Shafts, Drifts, Etc.

All ascents and descents in the workings through which the Lessee shall work, shall be kept equipped at all times with substantial ladders throughout their entire depths; and Lessee shall make all tunnels, drifts, winzes, upraises and crosscuts of adequate size to conform with good mining practice.

12. Inspection, Sampling and Surveying.

Lessee shall allow the Lessor and his agents or representative at any and all times to enter and visit all parts of said leased premises and the workings thereon, and any and all parts of any mill used by the Lessee for concentrating ores, for the purpose of inspection and taking of assay samples; to take samples from any ores awaiting milling or shipment; to have surveys made of the workings by the Lessor's surveyor and assistants whether under or above ground, or both. The Lessee shall furnish the Lessor copies of blue prints of all surveys or maps, including assay plan maps, made by or for the Lessee; and shall generally facilitate in every way such inspection, surveys and sampling.

13. Rights-of-way.

There is expressly reserved to the Lessor the right and privilege to do any and all development work upon the premises hereby leased which may be rendered desirable by reason of any litigation or controversy which may arise and which may affect said leased premises, and to use the hoisting machinery and workings on the leased premises in prosecuting such development work, provided, however, that the same shall not unreasonably interfere with the mining operations of the Lessee and that all ore mined in the prosecution of such development work shall belong to the Lessee herein (insofar as the same shall be taken from ground hereby leased) subject to the royalty hereinafter provided.

14. Expense Books, Payrolls, Etc.

The Lessee agrees to afford the Lessor every facility, at all times during regular business hours for the inspection and copying of all books, assay certificates, accounts, pay-rolls,

vouchers, correspondence, and papers generally of said Lessee insofar as they may relate to indebtedness or liabilities incurred or claimed for work, services, or materials in respect of said premises, or in respect to milling or shipment of ore therefrom.

15. Information.

The Lessee agrees to furnish on or before the 13th day of each month, if requested in writing so to do, a written report showing the number of man shifts worked during the preceding month, and in a general way, the amount of work accomplished during the preceding month and the nature thereof. Lessee shall furnish to Lessor, when requested, full, true and accurate information with regard to the condition of the mine workings on any part thereof in which Lessee shall work, and of the quality or character of the material therein.

16. Liens.

Lessee shall keep said premises and every part thereof at all times free and clear of all mechanics' or miners' liens, or other liens, encumbrances or liabilities; and shall settle, pay and discharge promptly all bona fide wages and indebtedness incurred by the Lessee for work done, services rendered, or material furnished in respect of said premises, failing in which it will suspend work immediately.

Lessee shall forthwith post, and at all times keep posted in some conspicuous place upon the premises hereby leased, a notice that said premises are leased to the Lessee and that the interest of the Lessor herein shall not be subject to any lien for services, labor or material furnished upon or used in connection with this lease, or said premises, said notice to be on behalf and in the name of the Lessor with the signature of the Lessee also attached.

Lessee shall have each and every man employed upon the premises hereby leased, including the Lessee's contractors, sub-contractors, sublessees, or licensees, and their respective employees, and each and every person, company or partnership from which the Lessee buys material on credit, or from which its contractors, sub-contractors, sublessees or licensees buy material on credit, sign a contract as follows:

"(Date)_____

"In consideration of my being employed by Lisbon Valley Uranium Company, or of Lisbon Valley Uranium Company purchasing material from me, I hereby covenant and agree to look solely to said Lisbon Valley Uranium Company for my pay, and I hereby waive all rights or claims that I may have in law or in equity against the properties, or any of them, upon which said labor is bestowed, or to which said material is furnished.

_____

(all blanks to be properly filled)

And the aforesaid releases shall be by the Lessee promptly delivered to the Lessor.

17. Annual Labor.

The Lessee shall, commencing with the annual period which starts July 1, 1956, perform the requisite annual assessment work required to maintain Lessor's possessory right to The Horrible, Big Gun, Cossack, Wild West, Manhattan, New Era, Advance, Hunt, Ryder, I. Phillips claims (unpatented) embraced in this lease, and shall each year record in the Clear Creek County records appropriate affidavits of labor performed, in accordance with the Statutes of Colorado. Should any additional ground which adjoins the demised premises be located by the Lessee or by any person acting in its behalf, either as lode, placer, or mill site, such location or locations, shall be made in the name of the Lessor; and any location so made shall be and become a part of the demised premises and be subject to all the terms and conditions of this lease.

18. Trespassers.

Lessee shall not allow any persons not in privity with the parties hereto to take or hold possession of said premises or any part thereof under any claim or pretense whatsoever.

19. Accidents.

Lessee agrees that it will save and keep Lessor harmless from any and all accidents to any of Lessee's employees, licensees,

agents, associates, or visitors, upon the property of the Lessor, or in being conveyed to or from the leased premises, whether such accident is due to the negligence of the Lessee or of its agents, servants, or employees, or otherwise, and will forthwith post and at all times keep posted at the main workings upon the premises hereby leased, a conspicuous notice in the name and on behalf of the Lessor with the name of the Lessee also attached, stating in substance that the premises are leased to the Lessee and that the Lessor will not be liable for damages on account of any such accident. The Lessor shall under no circumstances be liable to the Lessee or its agents, servants, employees, licensees, associates, visitors, or any other person, on account of any such accident.

20. Veins Discovered.

Lessee agrees that if it shall discover in working said premises, any side vein, cross-vein, spurs, or feeders, it will at once notify the Lessor and said veins, cross-veins, spurs or feeders shall be and remain the property of the Lessor, but the same shall be included in this lease.

21. Shipping Ore.

Ore shall be shipped by the Lessee with reasonable diligence after mining, with the right reserved to the Lessor to take and remove all ores not so shipped with reasonable diligence and to apply the proceeds under the directions of this lease.

22. Right of Property in Ores.

It is expressly understood and agreed that the Lessor reserves the property and right of property in and to all ores extracted or to be extracted from said premises and in and to all ores, bullion and concentrates not shipped within ten days after the expiration or other termination of this lease, that all ores which are of too low grade for profitable milling or shipment shall remain on the premises, subject to the sole control and disposition of the Lessor, and that any loss or expense resulting from or incident to any shipment of such low grade ore shall be borne and paid by the Lessee; that all low grade ore brought to surface and not milled or shipped shall be kept separate from and not mixed with waste, so that they may be available for milling or shipment at any time by the Lessor.

23. Royalty.

The Lessee shall pay, or cause to be paid to the Lessor at Silver Plume, Colorado, a royalty, upon ores mined and sold, in an amount equal to 12½% of the net proceeds thereof. By "net proceeds" is meant the gross value of the metals and minerals paid for, less smelting and transportation charges from the mine, or in the case of concentrates, from the place of concentration. By gross value is meant the basic price paid plus any bonuses paid except transportation bonuses. Smelting charges shall include incidental charges such as charges for small lots, frozen ore, sacked ore, umpires, and ore watchers. Said royalty shall be applicable to both metallic and non-metallic substances.

If the royalty hereinabove provided to be paid does not in the aggregate amount to $40,000.00 on ores and minerals mined and sold during the first twelve months of the term of this lease, or does not amount in the aggregate to $50,000.00 on ores and minerals mined and sold during any twelve-months period thereafter, the Lessee shall pay to the Lessor within thirty days after the end of such period a sum which in addition to the royalties already paid on ores and non-metallic substances so mined and sold, will amount to $40,000.00 for the first twelve months of the term, and will amount to $50,000.00 for each twelve-months period thereafter.

The Lessee shall instruct and direct each mill, smelter, sampler, reduction works or other ore purchaser to deduct the royalty due the Lessor upon settlement for each lot of ore or concentrates sold, and pay said royalty directly to the Lessor. If the Lessee desires to make deposits in the United States Mint, the Lessor and Lessee shall appoint a common agent to make such deposits, and to receive and divide the proceeds.

24. Tax Fund.

Upon settlement for each lot, the smelter or other ore purchaser shall deduct from the proceeds of such lot 2% of the net returns in addition to the royalties above stated and shall pay the same to the United States National Bank of Denver, Colorado, for deposit in an account subject to withdrawal upon order of the Lessor and Lessee

and the same shall be held as a tax fund for payment of any taxes levied and assessed against the demised premises as a producing mine. Like deduction and deposit shall be made upon settlement of each mint deposit. The sums so deposited shall be used by the parties for the payment of taxes on the property leased. After payment of taxes for any taxable period, any excess which has been accumulated in said fund by deposits from production during the yearly period for which such production was used as the basis of assessment, shall be returned to the party or parties entitled thereto; and if the amount so deposited in said fund be insufficient for the payment of taxes for any taxable period, the Lessee shall promptly pay to the Lessor, or to the tax collecting official, the amount of such deficienty (without regard to deposits made during any other period.)

25. Force Majeure.

If operations under this lease are interrupted or prevented by acts of Got, fires, riots, wars, strikes, inability to obtain equipment due to governmental order or action, failure of carriers to transport equipment, or regulations by state or federal action, this lease shall not terminate or be forfeited, and no right of damages shall exist against lessee by reason thereof, provided operations are commenced or resumed promptly after removal of such cause or causes. If operations be interrupted or suspended as aforesaid, the Lessee shall not be required to pay minimum royalty as hereinabove provided during the period of interruption, and the term of the lease shall be enlarged by a period equal to the period of interruption or suspension.

26. Legal Proceedings.

It is expressly covenanted and agreed between the parties hereto that should any legal proceedings be instituted, such as injunctions, apex suits, or any other proceedings whatever, which would interfere with the possession and enjoyment of the said leased premises, the Lessee shall under no circumstances attempt to hold the Lessor liable, in damages or otherwise to the Lessee on account of such disturbed and interrupted possession and enjoyment.

27. State Laws.

All of the operations of the Lessee under this lease shall be conducted as to comply fully in every respect with the laws of the State of Colorado.

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28. Forfeiture.

Upon failure to make any of the monthly payments due respectively on August 13, September 13, and October 13, 1956, at the time specified, or upon violation of the provisions of paragraph 7 hereof (workmen's compensation insurance) this lease shall immediately cease and determine, and no notice to the Lessee of cancellation shall be required. Upon violation of any of the other covenants hereinabove reserved and upon the part of the said Lessee to be paid, kept, done and performed, the said Lessor may, at his option and upon written notice to said Lessee specifying the specific violation or violations complained of, and giving notice of his intention so to do, cancel and annul this lease, unless said Lessee shall within thirty (30) days after receiving such written notice cease such violation or violations and pay to said Lessor all moneys then due under this lease and otherwise remedy the matter or matters concerning which it is in default. And if this lease be cancelled for any cause whatever said demised premises, with all improvements now located thereon and also all improvements made by said Lessee during the life of this agreement, shall be and become forfeited to said Lessor, and said Lessor may thereupon enter upon said premises and dispossess all persons occupying the same with or without force and with or without process of law, or, at the option of the Lessor, said Lessee and all persons found in occupation may be proceeded against as guilty of unlawful detainer.

The cancellation of this lease shall not release the Lessee from its obligation to pay taxes on the property assessed for the year in which such cancellation occurs.

29. Surrender.

The Lessee may at any time while not in default with respect to payment of taxes, give the Lessor thirty days notice in writing by registered mail addressed to the Lessor at Silver Plume, Colorado, of its intention to surrender and cancel this lease, at the same time tendering an amount reasonably estimated to be sufficient to pay the taxes assessed or to be assessed against the property for the year in which the intended surrender shall occur; and thereafter, at

the end of such thirty-day period, this lease and the option herein contained shall terminate.

30. Removal of Machinery.

The Lessee shall have the right, for a period of sixty (60) days after the termination of this lease by limitation or otherwise, to remove all mining and milling machinery placed thereon by said Lessee; but all machinery belonging to the Lessor and other improvements now located on said premises or which may be placed thereon by the Lessee, including buildings, gallows frames, ore bins, rails and underground pipes of every kind or nature, shall be left on said premises; provided, however, that no mining machinery or equipment shall be removed while the Lessee is indebted to the Lessor, nor so long as the Lessee continues to be under obligation to pay taxes.

31. Notice.

All notices, reports, maps, tax receipts, statements, and other data and information to be by the Lessee given to the Lessor shall be given by delivering or mailing the same to the Lessor at Silver Plume, Colorado, and those to be given to the Lessee at No. 501 Kittredge Building, Denver, Colorado, or at such other address as the Lessee shall in writing direct.

32. D.M.E.A. Contract Obligations.

On June 13, 1954, Lessor entered into a "Termination Agreement" with the United States of America acting through Defense Minerals Exploration Administration, under the terms of which the Government is entitled to a lien on ores produced during the period of twelve years from said date from certain of the properties covered by this lease, or until the Government shall have been repaid, by the application of percentage royalties, the sum of $9,292.41 by it expended under Exploration Project Contract designated No. IDM. 37. Any percentages of proceeds of ores, which shall be paid in the discharge of said obligation, shall be deducted from royalties due the Lessor; and the Lessor agrees to keep and save harmless the Lessee from all liability by reason of said obligation.

33. Option.

In consideration of the acceptance of the foregoing lease and the expenditures to be made thereunder, and the well and faithful keeping of the covenants thereof, the Lessor grants to the Lessee an option to purchase the demised property together with all the Lessor's equipment and personal property thereon, at any time while this lease is in effect at a price which shall be $1,000,000.00 less the following:

(a) The $2,500.00 paid at the date hereof as part of the consideration for the granting of this lease.

(b) The $7,500.00 to be paid in three installments of $2,500.00 each on the 13th day of August, September and October, 1956.

(c) All amounts paid as royalty hereunder.

(d) All amounts paid as rental in lieu of doing work.

The foregoing option shall be exercised in the following manner:

On or before fifteen months from the date hereof, the Lessor shall make and execute a good and sufficient mining deed, without warranty, conveying the leased property to the Lessee, and the same, together with such abstracts of title as the Lessor has and a copy of the lease and option agreement shall be escrowed with United States National Bank, Denver, Colorado (or other bank agreed upon by the parties) with appropriate instructions to said bank to deliver the same to the Lessee when the full purchase price is paid. After such escrow is arranged, all payments to the Lessor which are to be credited on purchase price shall be transmitted through the escrow holder, and the escrow instructions to said bank shall so provide.

The forfeiture, surrender or termination of the foregoing lease shall render the above option void.

34. Time is the essence of this contract in all particulars.

35. This agreement shall be binding upon and enforceable by the respective successors, heirs, executors, administrators, and assigns of the parties hereto.

Lisbon Valley Uranium Company
501 Kittredge Building
Denver 2, Colorado

IN WITNESS WHEREOF, the Lessor has hereunto subscribed his name and Lisbon Valley Uranium Company has caused its name to be hereunto subscribed by James M. Knowles, its Chairman of the Board, thereunto duly authorized, the day and year first above written.

/s/ John A. Smith
Lessor

LISBON VALLEY URANIUM COMPANY

By /s/ Jas. M. Knowles
Chairman of the Board

Attest:

/s/ Melvin F. Schroeder
Secretary

Lessee

STATE OF COLORADO)
CITY AND)ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 13th day of July, 1956, by John A. Smith.

Witness my hand and official seal.
My commission expires September 16, 1957.

/s/ Josephine Burger
Notary Public

STATE OF COLORADO)
City and)ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 14th day of July, by James M. Knowles as its Chairman of the Board, and Melvin F. Schroeder as Secretary of Lisbon Valley Uranium Company, a Colorado corporation.

Witness my hand and official seal.
My commission expires September 16, 1957.

/s/ Josephine Burger
Notary Public

Lisbon Valley Uranium Company
501 Kittredge Building
Denver, Colorado

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FIRST SUPPLEMENT TO MINING LEASE AND OPTION

This First Supplement to Mining Lease and Option, made and entered into this 16th day of July, 1956, by and between JOHN A. SMITH, of Silver Plume, Colorado, hereinafter called "Lessor," and LISBON VALLEY URANIUM COMPANY, a Colorado corporation, hereinafter called "Lessee,"

WITNESSETH: That

WHEREAS, the parties desire to clarify certain provisions of the Mining Lease and Option entered into by the parties on July 13, 1956, covering all mining properties in Clear Creek County, Colorado, owned by John A. Smith on said date; now therefore

THE PARTIES MUTUALLY AGREE AS FOLLOWS:

With reference to paragraph 2, it is agreed that in case the Lessee shall be merged or consolidated with another corporation, no consent of the Lessor shall be required in connection with the acquisition of this lease by the surviving corporation.

With reference to paragraph 6, it is agreed that the portion of the 1956 taxes to be paid by the Lessor shall be computed on the basis of the taxes for 1955.

With reference to paragraph 18, it is agreed that the Lessee shall not be under any obligation to dispossess occupants of the surface who do not claim mineral rights.

With reference to paragraph 13, it is agreed that if Lessor shall do work under the right reserved in paragraph 13, the Lessor shall save and keep harmless the Lessee from all accidents to the Lessor, his employees, licensees, agents, associates and visitors, in connection with such work.

IN WITNESS WHEREOF, the Lessor has hereunto subscribed his name and Lisbon Valley Uranium Company has caused its name to be hereunto subscribed by James M. Knowles, its Chairman of the Board, thereupon duly authorized, the day and year first above written.

/s/ John A. Smith
Lessor

LISBON VALLEY URANIUM COMPANY

By /s/ Jas. M. Knowles
Chairman of the Board

Attest:
/s/ Melvin F. Schroeder
Secretary

Lisbon Valley Uranium Company
501 Kittredge Building
Denver, Colorado

STATE OF COLORADO)
CITY AND)
COUNTY OF DENVER)ss.

The foregoing instrument was acknowledged before me this 16the day of July, 1956, by John A. Smith.

Witness my hand and official seal.
My commission expires September 16, 1957.
/s/ Josephine Burger

Notary Public

STATE OF COLORADO)
CITY AND)ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this _____day of July, by James M. Knowles as its Chairman of the Board, and Melvin F. Schroeder as Secretary of Lisbon Valley Uranium Company, a Colorado corporation.

Witness my hand and official seal.
My commission expires_____
/s/ Judy Lynch
Notary Public

Lisbon Valley Uranium Company
801 Kittredge Building
Denver 2, Colorado

4. PHYSICAL DESCRIPTION

(a) The Bismarck lode was discovered in June, 1866, by a party of prospectors from Central City. The Pelican Lode was discovered in 1868. The narrow claims of both the Pelican and the Dives companies failed to cover the lodes and led to almost interminable litigation. It was not until early 1871 that the mine began producing ore. In 1872 began the fierce quarrels between the owners of the Pelican and Dives claims which culminated in May, 1875. The litigation, which also started in 1872 and included suits and counter suits, injunctions and counter injunctions, finally came to an end with the consolidation of the two properties in March, 1880, when both came into possession of the Pelican and Dives Mining Company. This company then began buying up neighboring properties, among which were the Bismark and Seven-Thirty mines.

Working through shafts which collared high on the slope of the mountain, water was encountered at depth and the difficulties of getting the ore off of the mountain encouraged the driving of haulage and drainage tunnels. Most of the mining was discontinued while the Burleigh and Diamond tunnels were driven. Due to lack of finances and low price of metals, no new development work was done and the property closed down about 1912 to 1914. A few leasers worked after the close down, but very little work has been done in this property from 1914 to the present time. About 1938 Mr. John Smith became interested in this property and he purchased several of these mines and paid up old taxes and bought overlapping claims to give clear title to all of the claims so now the property can be worked without cause for litigation.

These underground workings are very extensive; one old report states 52 miles of underground adit and drifts in this area and probably one-half of that work is within this property.

The altitude of the Burleigh tunnel is 9152 feet and the altitude of the mountain which the tunnel penetrates is over 11,000 feet, giving up to 2000 feet vertical of minable ground above the tunnel level. The mine workings explore the Bismark, Pelican veins for a distance of one mile and the Seven-Thirty, Hercules and Corry City vein for over a mile.

The Burleigh Tunnel is driven into the mountain to cut the Phillips vein, the Seven-Thirty vein and a raise is up to cut the Pelican vein. The Diamond Tunnel is driven in to cut the Corry City vein and Pelican vein, but very little exploration work has been done from either of these tunnel levels.

The Lisbon Valley Uranium Company obtained a lease and option on the Silver Plume Property on July 13, 1956, and now have miners retimbering and cleaning out the Zero, Illinois, Hercules, Burleigh and Diamond Tunnels. The Bureau of Mines examined this property in 1943, Project No. 1561.

(b) Past and current production and ore reserves:

From 1880 to 1900 this area was the largest silver producing area in the United States. H. H. Holmes, Mining Engineer, in his report in 1905 gave the ore production of $40,000,000.00, mostly in silver; the smelter penalized for zinc and paid very little for lead during this period. Nothing was mined for shipping ore which ran less than 50 ounces of silver per ton. The lead, zinc ore was left in the stopes. In a report by Mr. McReynold it gives 500,000 tons of ore broken and gobbed in the stopes which carries silver, lead, zinc of commercial grade for milling, 200,000 tons of ore blocked out but still in place and 750,000 tons of dump material which will assay 5.0 oz. silver , 2% Pb. and 3% Zn. (Most of the dump material has been milled.) In 1896 the average value of ore shipped from the Pelican-Bismark mine was $75.00 per ton. This ore contained 150 oz. Ag, 0.1 oz. Au., 14% Pb. and 20% Zn. (about $230.00 per ton at present metal prices.)

(c) Description of Geological features of Property:

The earliest formation in the area covered by the Silver Plume special map (Pl XXI U.S.G.S. Professional Paper 63) consists of a series of crystalline gneisses and schists, having irregular strike and a variable but generally steep dip. These gneisses occupy about one-half of the area mapped. They are divided into three classes: 1. granitic gneiss with pebble-like inclusions, 2. granitic gneiss without pebble-like inclusions, 3. black biotite gneiss. These early formations were cut by porphyry dikes, Silver Plume granite pegmatites and dioritic rocks.

The original ore deposition consisted of predominant blend, with galena and pyrite. The ore was deposited along fractures and fissure zones of slight displacement. Many of these veins were deposited throughout a great vertical, as well as horizontal, range. Some are known to extend at least 1,800 feet below the present surface and are probably much deeper. The fractures and fissures vary in width from a few inches to over one hundred feet.

Mr. George H. Bendle says of the Corry City lode: I was one of the original owners of the Corry City which was 25 to 30 feet in width. We sank a shaft 110 feet on the vein, the dip was 45 to 55 degrees. We found solid rich ore all through the gangue, found frequently pieces of native silver half the size of my hand. As water was making very fast in the shaft we were not able to keep it pumped out so had to sell our property.

Mr. H. W. Moore said of the Corry City: The vein is a very large, true fissure, at least 35 feet wide at surface carrying a rich grade of ore scattered through the crevice for the whole width of the same averaging 20 to 50 oz. per ton. At a little greater depth I found solid ore carrying 400 to 500 oz. silver per ton.

From the number of reports written describing this property they all state that large tonnages of good commercial ore have been mined from this property and far less than half of the mineralized area has been developed. The drain tunnels and haulage tunnels have been driven so that the ore now can be mined at a minimum cost. Mining engineers and mine operators who have operated the property before the working caved state that this property has the possibilities of being one of the largest, if not the largest, silver, lead, zinc properties in the state of Colorado.

(d) Accessibility of the project:

The Burleigh Tunnel is within 100 yds. from U. S. Highway No. 6 and the Diamond tunnel has a road to the portal which is less than 1/4 mile from Highway. A zigzag road leads from the Highway up to the Pelican, Zero and Illinois tunnels.

A.S. & R. Co. Smelter at Leadville, Colorado, is a distance of 64 miles where any smelting ore or concentrates can be sold and

the zinc concentrate from our mill will be shipped from Golden, Colorado, a distance of 35 miles by truck, to Amarillo, Texas. The Town of Silver Plume has enough residences to accommodate all of our workmen at present.

(e) Availability of Manpower, material, etc.:

We at present have 15 men on the payroll and there are men at the mine most every day looking for work. Mining supplies and equipment are available at Denver, a distance of 50 miles, and power furnished by Public Service Co. is now connected to our mill at the mine.

Lisbon Valley Uranium Company
501 Kittredge Building
Denver 2, Colorado

5. (b) Proposed Work.

1. Dewater the Ricci winze which was sunk from the Burleigh Tunnel level on the Phillips vein and drift southwest 500 feet along the Phillip vein on the 90 foot sublevel of the winze. Ore has been mined along the Phillip vein on and above the Burleigh tunnel level and there is ore in the bottom of the Phillip vein drift on the Burleigh level. The drift is now caved beyond the winze. (Proposed work is marked in red on Horizontal Plan map of workings)

2. Drive the Burleigh tunnel 300 feet northwesterly direction from the present main tunnel face. The purpose of this is to cut under the mineralized zone which produced abundance of ore on the Hercules tunnel level.

3. Retimber the last 250 feet of the present and cut and drive the Burleigh tunnel 300 feet northeasterly from the present northeast face of the Burleigh tunnel for the purpose of cutting the projection of the Wisconsin, Illinois ore shoot on the Burleigh tunnel level.

4. Drive a 200 ft. crosscut from a point 80 feet southwest of the guenzi raise on the Burleigh level to the face of the east drift from the guenzi raise. (The east drift from the guenzi raise is now caved) Then drift 200 feet east along this the Pelican Bismark vein. The Pelican Bismark drift on the Diamond level shows ore in the bottom of the drift. This Burleigh level drift would explore the vein on the Burleigh level 150 feet below the Diamond level.

5. Retimber the last 400 feet of the Corry City drift and drive 500 feet northwest on the Corry City vein on the Diamond Tunnel level. This will explore this vein beyond any previous exploration. The Corry City vein has been an abundant producer of silver-lead ore and the present face of this drift has ore showing.

6. Core drill 7,500 feet of horizontal holes to explore mineral zones. The ore occurs in veins which are within wide breccia zones or channels which are 100 feet or more in width. The Seven-Thirty mineral zone which strikes N. 75 to 80° E. and the Bismark Pelican mineral zone which strikes S. 60° E. are the two big mineral

zones. The drifts which have been run along these channels have encountered ore but there may be parallel veins within the channels which are virgin. Core drilling will explore these wide channels. This drilling will be done where geological conditions indicate parallel ore veins. Most of these holes will be less than 75 feet.

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5. (d) Operating experience and background of applicants, officers and directors.

James M. Knowles is Chairman of the Board of Directors of the Lisbon Valley Uranium Company. Prior to 1949, was known principally as a rancher. He engaged in the livestock business in the Gunnison Colorado area, for 20 years. However, in June of 1949, Mr. Knowles engaged in a mining venture and became associated with Mammoth Mining and Development Co. This firm was sold to Aurora Uranium in 1950. Since then, Mr. Knowles has engaged in prospecting, mining and consulting work until May 1, 1954, when he became one of the active heads of Lisbon Valley Uranium Company.

Milder M. Brinton is President and a Director of Lisbon Valley Uranium Company. Graduate of the University of Utah in 1923 as Mining and Geological Engineer. From 1923 to 1935, Mr. Brinton was Mine accountant, assayer, mining engineer, mine foreman and mine superintendent for Combined Metals Reduction Company and W. F. Snyder and Sons. From 1935 to 1942, President and General Manager of Sheridan Gold Mining and Milling Company, at Sheridan, Montana. The mining operation at Sheridan was shut down because of Government Order L 208. From 1942 to 1943, Mining Engineer for U.S. Bureau of Mines, at Helena, Montana. From 1943 to 1947, Superintendent for Samuels and Franklin, Contractors, engaged in replacing old timbers in tunnels with concrete for the D&RG Railroad. From 1947 to the present, engaged in the exploration for uranium and vanadium as a mining Engineer.

Albert T. Fischer, Vice President and Director, is retired after 40 years service with Standard Oil Company of Indiana. From 1916 to 1949 as an Industrial Lubrication consultant. During this time he worked largely on mine machinery lubrication and maintenance. From 1949 to 1953 was Bulk plant operator for Standard Oil Co. at Grand Junction, Colorado, where he served many of the early uranium mines in the Uravan, Colorado area.

Melvin F. Schroeder, Secretary-Treasurer and Director, is a graduate accountant. From 1936 to 1940 was bookkeeper for Socolo Gasoline Corp., of Trinidad, Colorado. From 1940 to 1942, chief statistician for the Texas Company, Denver, Colorado. From 1942 to 1945 served in the U.S. Air Force. From 1945 to 1951 was Sales Supervisor for Standard Oil Co. in Western Colorado. From 1951 to 1954 was chief Accountant for Western Oil Fields, Inc., of Denver, Colo., and from 1954 to date has served as Secretary-Treasurer and Office Manager for Lisbon Valley Uranium Company.

Grover E. Williams, Director, has been in mining for the past 21 years. From 1935 to 1938 he operated a gold-silver lease with his father at Telluride, Colo. From 1938 to 1940 drove tunnel for Alta Mines, Telluride, Colorado. From 1940 through 1941 supervised a 20 man operation for Oliver Brothers at Telluride, Colo. From 1942 to 1944 was Shift Boss for Telluride Mines, of Telluride, Colo. He served in the United States Army and returned to Telluride, Colo. where he worked from 1946 until 1948 as mine foreman for Telluride Mines. From 1948 thru 1954 was an independent lessee and operator of uranium properties in the Uravan, Gateway and Slick Rock areas of Colorado. During 1955 he did uranium exploration work for Bitronics, Inc., of New York, and in 1956 joined Lisbon Valley Uranium Company as general mine foreman.

Dell E. Litz, Director, was graduated from Colorado School of Mines in 1927 as a Mining Engineer. After two years surveying work with the City of Omaha and the U. P. Railroad he worked two years as chemist with Anaconda Copper Mining Co. From 1931 to 1946 he worked as chemist, smelter superintendent and metallugical superintendent for Roan Antelope Copper Mines, Ltd., and Nufulira Copper Mines, Ltd., both of North Rhodesia, Africa. From 1947 to 1951 he engaged in personal business enterprises in the U. S. From 1951 through June 1955 he served as metallurgist with Ivanhoe Trust Co., Silicate Reduction Corp., and Western Mines, Inc., and as Field Superintendent for Arco Uranium, Inc. From June 1955 to the present date has been employed as Metallurgist with Sweets Engineering Research Co., of Denver, Colorado.

Lisbon Valley Uranium Company
501 Kittredge Building
Denver 2, Colorado

6. Estimate of Costs.

(a) The Company does not anticipate any contract work.

(b) The estimated cost to the Company for drifting and crosscutting is $20.00 per foot and $5.00 per foot for timbering, short hole core drilling $2.00 per foot. Anticipated wages will be miners $2.00 per hour, miner helper $1.75 per hour, core drillers $2.50 per hour and helper $1.75 per hour. Supervision engineering and geological consultants $1,000.00 per month.

Project No. 1 as shown on the horizontal plan map in red:

Dewater shaft, labor & power	$ 250.00	
500 feet of drift on 90 ft. level	10,000.00	
Timbering estimated ½ distance	1,250.00	
Retimbering overhead and collar of winze	500.00	$12,000.00

Project No. 2

300 feet of drifting @ 20.00	$ 6,000.00	
Timbering estimated ½ distance @ 5.00	750.00	$ 6,750.00

Project No. 3

Timbering 550 feet @ $5.00	$ 2,750.00	
Crosscutting 300 feet @ $20.00	6,000.00	$ 8,750.00

Project No. 4

Crosscutting 200 feet	$ 4,000.00	
Drifting 200 feet	4,000.00	
Timbering 200 feet	1,000.00	$ 9,000.00

Project No. 5

Retimbering 400 ft. @ $5.00	$ 2,000.00	
Drifting 500 feet @ $20.00	10,000.00	
Timbering ½ drift 250 ft. @ $5.00	1,250.00	$13,250.00

Project No. 6

Core drilling 7500 feet @ $2.00	$15,000.00	$15,000.00

Machinery and supplies necessary:

5000 ft. 20# rails 16.5 tons @ $180.00	$ 2,970.00	
2500 ft. 2" pipe @ 42¢	1,050.00	
Hoisting machinery	5,000.00	
2 compressors	12,000.00	
2 trammers $2,500.00 ea.	5,000.00	
10 mine cars @ $150.00 ea.	1,500.00	
2 muckers	6,400.00	
Drilling equipment (jack hammer, etc.)	2,000.00	
Pump	500.00	
Core drill	3,000.00	
Small tools	500.00	$39,920.00

Monthly power bill $100.00 - 6 months	$ 600.00	
Office monthly $150.00 " "	900.00	
Industrial insurance - $625. " "	3,750.00	
Assaying per month $100.00 " "	600.00	$ 5,850.00
TOTAL		$110,520.00

Lisbon Valley Uranium Company
501 Kittredge Building
Denver 2, Colorado

May 1, 1880

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LOCATION OF PROPERTIES

The property owned by the Colorado Diamond Tunnel Silver Mining Company of Baltimore City, is located on Republican Mountain, on the edge of the town of Silver Plume, one and one-half miles west of Georgetown, the present terminus of the Mountain Division of the Colorado Central Railroad.

The mouth of the tunnel is about one hundred feet above the level of the creek, affording ample facilities for dumpage for all time, and is reached by a wagon road of easy grade, built by the company.

The accompanying sketch of Republican Mountain, showing the location of the Tunnel, mines, etc., will give a general idea of the relative situation of the Tunnel property, and several of the mines which have served to render Clear Creek County famous as a Silver center.

The Diamond Tunnel is located on the southern slope of the mountain, so that work can be prosecuted without interruption at all seasons of the year. At the present time, first class facilities exist for the sale of ores, a lively competition assuring the highest market price to sellers.

DESCRIPTION OF COMPANY'S PROPERTY

The Tunnel Site Claim is 1500 x 3000 feet in horizontal measurement, in front of which are 2.28 acres of ground covered by U. S. patent, on which are located three ore-houses and blacksmith's shop, ample room being afforded for the erection of concentrating works, or other works and buildings that the future development of the property may render necessary.

The course of the tunnel is N. twenty degrees W. It is 8 feet in width and seven feet in height, made for a double track. At this date, November 1, 1880, 1564 feet in length, and its further continuance is steadily progressing. The present breast of the tunnel is about 1000 feet below the surface.

Thus far ten well defined lodes, as well as a number of spurs or gash veins have been intersected; nine of these lodes being the property of the Tunnel Company, and the exception, the celebrated Dives Lode. A reference to the accompanying plan and section will explain the relative positions of the different lodes and the names of these secured by U. S. patents. The title to all the Company's property is absolutely indisputable, a certified copy of the abstract of which can be seen at the company's office.

The development which has been made on the veins has been chiefly on Nos. 5 and 6, aggregating 1510 feet in drifts and winzes; but little stoping has been done. The entire product from these two lodes has been about $34,000.00. In addition to this, several thousand dollars has been received for the right of way through the Tunnel adjoining mines.

The immense advantages offered by the Diamond Tunnel as an outlet to adjacent mines is conceded by all, and it will be extensively utilized for this purpose as fast as the different properties can make the necessary connection, when the revenues from this source will be largely augmented.

We have met the usual array of figures of the millions produced which heretofore appears to have been the only criterion

of value and inducement to purchasers of Mining Properties. The past record of a mine but shows so much that is gone forever, in this country, usually representing the amount taken from surface pockets, where the mining expenses are much lighter than is likely to be at a greater depth where the sinking of shafts and the hoisting of product have to be provided for. It has always been the opinion of miners that in Fissure veins, the greater the depth, the richer the deposit, and the practical working of deep mines has so far supported this opinion.

The running of the Diamond Tunnel has opened a second surface on all its mines, which possesses all the natural advantages of the upper or natural Earth's surface, and also, some additional ones that are of great value. In working a mine from the "natural surface," it must necessarily be done by "shafts," requiring the hoisting of the product up the shafts and hauling it down the mountain, and also pumping the drainage water from the shaft; this entails four separate items of expense.

By working on the Tunnel level, or second surface, we strike the same veins or pockets that make a showing on the surface, with the advantage of working them at a depth say of 500 to 1500 ft. nearer their richest deposits; and in working them save the expense of hoisting 500 to 1500 feet, and then hauling down the outside of the mountain to a point opposite the mouth of the Tunnel; and avoid the expensive necessity of pumping by providing a natural drainage through the Tunnel, for all water percolating through the lodes; in working upwards the ore is dropped without hoisting and shipped through the Tunnel.

Our production has been small considering the time engaged in this enterprise, yet in view of the meager development on the lodes it is all that can be reasonably expected. Our great aim and desire has been to acquire all the property adjacent to the Diamond Tunnel that was desirable and available, before commencing extensive development, and this has now been accomplished.

Geologic indications and the Production of neighboring mines both east and west of the Tunnel, together with the explorations made on our own veins, has encouraged us to prosecute continuously for eight years, the work which has resulted in one of the finest and best tunnel and mining enterprises in the State, if not, indeed, in our whole country.

We refer to Prof. R. W. Raymond's report, (Mineral resources west of the Rocky Mountains, 1875, page 368), to Cushman's "Mines of Clear Creek County, Colorado," pages 22-3, 4 and 5 and page 38, ("Corry City," now belonging to this company.) Fossett's Colorado of 1879, pages 389 to 394, General Vinton's report in the Engineering and Mining Journal of Jan. 19, 1878, and following letters from well known practical mining experts and engineers, mine managers, merchants, Bankers and others, all of whom are acquainted with the enterprise.

Lisbon Valley Uranium Company
501 Kittredge Building
Denver 2, Colorado

REPORT OF PROF. J. E. CLAYTON, MINING GEOLOGIST

RECEIVED
SEP 1 3 1956

To the Directors Colorado Diamond Tunnel Silver Mining

Gentlemen:

In response to your instructions I have made a careful examination of your Diamond Tunnel, and the Silver bearing lodes intersected by it, and respectfully submit the following report as the result of my investigation.

The Diamond Tunnel and the group of lodes intersected by it are situated in the South slope of the Republican Mountain, about two miles west of the city of Georgetown, the county seat of Clear Creek County, Colorado; Silver Plume, a thriving mining town is situated on the creek bottom at the South base of Republican Mountain, just opposite and below the mouth of Diamond Tunnel. The mountain slope is very steep and rough, but a zig-zag road has been made up its side to the croppings of the principal mines of the group. An excellent description of these properties and the surroundings has been published in the "Engineering and Mining Journal" of Jan. 19, 1878, with sketches by the late Gen. Francis L. Vinton, which please see. It gives more detailed descriptions than can possibly be embodied in this report.

By reference to Gen. Vinton's descriptions, and to the maps in your possession, the situations and surroundings can be perfectly understood. I have taken some pains to have a correct profile and geological section made on the line of the Tunnel, that shows the principal lodes and fissures that have been cut,

and the probable position of the Corry city and other lodes not yet reached. The principal lodes of the group cut, and to be cut by the Tunnel, have a general trend E. and W. with the longitudinal axis of the mountains. The divergencies in course range from E.-W. to N.W. S.E.

VEIN SYSTEMS

There are two well marked vein systems in your district that seem to carry the largest and richest ore deposits. First, an E-W system that extends to a great length, and having a dip north at angles varying from 60 degrees to 80 degrees, or nearly vertical. The Dives Lode is the most characteristic of this system which crosses the Diamond Tunnel. Second, a N.W.-S.E. system that dips N.E. at angles varying from 50 degrees down to the vertical line. The Baxter and Corry City Lodes are notable examples of this system.

The "Diamond Tunnel" has been driven into the mountain a distance of 1564 feet. Nine fissures have been cut, and rights secured to all of them except the "Dives" which belongs to another company. A majority of the fissures cut are metal bearing lodes of promising character. Following is a brief notice of them in the order in which they have been cut by the Tunnel. No. 1 was cut at a distance of 153 feet from the mouth of the Tunnel. This is a small fissure in hard rock that shows no value and does not have the appearance of a true lode. No. 2 was cut at a distance of 251 feet. This is a strong fissure having a course of nearly E-W and dip south of about 70 degrees below the horizontal plane. This

fissure does not show ore of value at the point cut, but it may carry ore at some point west where it enters more favorable ground. No. 3 was cut at a distance of 390 feet from the mouth of the Tunnel. This is a strong well defined fissure lode, and appears to be the first of a series of lodes that belong in the ore belt proper. It shows a small seam of ore in the south wall, and the crevice matter or vein stuff common to the lodes of this district. Levels should be run right and left into a change of country rock. I think the indications more favorable towards the west, but the prospect warrants driving both E. and W. to points opposite the rich ores in the Baxter and Dives lodes. The course of the lode is nearly N.W.-S.E. and dip north 75 degrees to 80°. No. 4 was cut at a distance of 522 feet. Its course is N. 50 degrees W. and dip South 75 degrees, thus showing that it will unite with No. 3 to the east, and will in all probability unite with it going west. This is also a strong fissure lode of promising character, carrying small seams of ore, and especially favorable in the fact of the N.W. drift now in from the mouth of the Tunnel 174 feet. In the drift to the right, or S.E. 29 feet the ground does not look so favorable, but as there is more favorable ground ahead it should be extended East far enough to prove the lode in that direction. No. 5 is the well known "Baxter" Lode. It was cut at a distance of 652 feet from the mouth of the Tunnel. The course is about N. 45 degrees W. and S. 45 degrees E., and it stands nearly vertical, say a dip of 85 degrees or within 5 degrees of the vertical line. This is a strong, well defined lode, 4 to 10 feet or more between

its walls, and carries very high grade ore. Some portions of the lode east of the Tunnel have produced ore of unusual richness and in considerable quantities, ranging in value from 100 to 1000 ounces or more per ton. The total product of the "East Baxter" is something over $300,000 up to date. The west end of the Baxter Lode owned by your company is comparatively unexplored ground. A level has been driven from the Tunnel N.W. 159 feet which shows a wide vein dividing into three fissures carrying small seams of ore, but as yet no large bodies of ore. The vein in the face of the N.W. drift is looking better than for some distance back. The drift has been passing through a pinch of hard ground for some 50 feet, but is now coming into grey porphyry that looks more favorable for ore bodies. A raise has been made 40 feet west of the Tunnel, 100 feet above, and drift run N.W. on the lode 179 feet. This drift has passed through the hard block of ground (encountered below) and they now have a fine opening of the lode of two or three feet in width seams of good ore scattered through the crevices or vein gangue. It looks as though good pay may be expected within a few feet. I think it advisable to drive both these levels on the lode N.W. continuously, and make raises on any chute of ore cut that looks at all favorable. In the lower level the vein branches into three fissures about 50 feet west of the Tunnel. The South branch may be a separate vein, possibly the dislocated portion of Lode No. 6. If this surmise be true, it may prove of great value, as that lode on the north side of the Baxter lode is nearly vertical, while the No. 6 lode dips flat (45 to 50 degrees) to the

north, and has a horizontal course of about 15 degrees south of West, thus making an oblique intersextion that pitches down as you go west. Hence that portion of the Lode lying South of the Baxter should be found somewhere continuing its course to the west. If I am right in this opinion, it shows that the down throw of No. 6, South of the Baxter, is something more than 100 feet. The intersection of No. 6 with the Baxter on the north side has been shown at a number of places in the old workings, but no trace of it has been found on the South side, unless that is it seen in the level 50 feet west of the Tunnel. I advise driving the level on this South Spur, and following it to and through Nos. 4 and 3, both of which, must intersect it at about the same angle that the Baxter does. I have great faith in this western block of ground and think it should be explored thoroughly.

No. 6 lode is cut by the Tunnel 794 feet from the mouth. As above stated its course is about 75 degrees W. and its dip N. 45 to 55 degrees. It is an older vein than the Baxter, has a different course and dip, and is cut and displaced by the Baxter as above described. This lode has been a good ore producer East of the Tunnel, and I have no doubt will so prove in the West end when it is properly traced out and explored. No. 7 is the "Dives Lode" one of the richest and most widely known of any Silver mine in Clear Creek County, (See Fossett's Colorado, pages 389 to 392) According to the statistics given, this lode has produced $2,611,253.00 gross assay value. This large sum was taken out West of the line of the Diamond Tunnel, and does not include the large

out-put of the "Dunkirk" Mine east of the Tunnel and known to be on the same lode. Between No. 6 lode and the "Dives" is a space of 343 feet. In this space there are five seams or small fissures in rather hard country rock. They are marked on the section as Lodes C, D, E, F and G. Some of them carry a little ore, but they have the appearance of "gash" veins or ramifying seams, often met within the neighborhood of true lodes. Such seams are sometimes very rich for short distances from the main lodes. No. 8 is a small but promising lode; it is about 100 feet north of the "Dives" where it enters the West wall of the Tunnel. The fissure is about three feet wide, with well defined walls in hard chrystalline schist. All the lodes are poor or barren in this peculiarly hard, dry schist, unless they are associated with porphyry dikes or heavy clay seams. No. 9 is a fissure and line of "fault" in the country rock. Its course is nearly E-W and dips North about 70 degrees. It shows some mineral, and I recommend driving a level E, on this fissure to its intersection with the south extension of the Corry City Lode. It may lead to very important ore bearing in the S. E. end of that lode. If developments are favorable in the East side, then it will warrant driving West, also, under the gulch into the porphyry zone. This fissure is 1380 feet from the mouth of the Tunnel, and the last one cut of any note. The face of the Tunnel is now in 1564 feet, in hard chrystalline schist. Near the face a small seam of ore was met with, much like those near the Dives but is of no importance beyond its indication of being near some true lode, or an important change in the country rock from schist to porphyry.

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CORRY CITY LODE

This is probably the largest and best true Fissure Lode in this remarkable belt of Silver bearing veins, and is the principal object sought in driving the Tunnel. The original discoverers attempted to open the lode from the surface near Cherokee Gulch. They succeeded in sinking a shaft 100 ft. deep and cross cutting the vein from south-west to the north-east wall. This cross cut showed the lode to be 25 feet wide between the walls and carrying disseminated ore all through the porphyrite gangue stone, but the ore was not sufficiently concentrated into masses to make it pay for shipment in those early days, without concentrating or dressing. When the N.E. wall was cut the water came in so strong that they were compelled to abandon all attempts to explore the lode from the surface. It was then decided to drive an adit level from the south base of the mountain to cut and drain this great lode.

I have had a careful survey made, to ascertain as near as possible the distance at which the Tunnel will cut this lode, and my conclusion is that the Tunnel must run about 300 ft. further to accomplish this primary object of the enterprise.

The course of the Lode is about N.W.-S.E., and the dip at the out-crop is 45 degrees to 55 degrees towards the N.E. The dip will probably be much steeper before it reaches the Tunnel level, but the course of the Tunnel is approaching the lode obliquely instead of at right angles. Allowing for this I think the lode cannot be reached without driving at least 300 ft. more.

Judging from surface indications another strong lode will be cut before the Corry City Lode is reached. Two other strong lodes are known to traverse the mountain north of the Corry City Lode. They are said to be good prospects, but I did not examine them because they were covered with snow before my other and more important examinations were completed.

GENERAL REMARKS

The Diamond Tunnel project has been laid out with good judgment and prosecuted with business like skill and energy. It penetrates one of the richest groups of mines in Clear Creek County. It is situated on the sunny side of the mountain and is never blocked up with deep snows and is easily accessable at all seasons of the year.

I consider its greatest value and future prospects equal to any silver mining enterprise in the country, and if its affairs are continued with the same business sagacity that has characterized its past management, I can confidently predict for it a gratifying financial success.

After the Tunnel is completed through the Corry City Lode you will need a good plant of machinery on the Creek bottom, or near it for two important reasons. First, to compress air for use in working the mine instead of using steam, and Second, to crush and dress the second class and low grade ores extracted from the whole group of mines cut by the Tunnel.

In view of these future needs it will be necessary to acquire such lands and mill sites on the Creek as will be sufficient

to meet all requirements. In my judgment you have a good year's work ahead in the preliminary exploration of your lodes already cut, and in completing the Tunnel to the Corry City Lode, before the erection of heavy machinery is needed. A suitable plant for the machinery should be secured, however, without delay. In addition to this, my advice is to provide an ample fund to complete the Tunnel to the Corry City Lode and for driving, right and left on all the most promising lodes cut, so as to have the ground well explored, before the kind and extent of the reduction works, etc., is determined.

All of which is respectfully submitted.

J. E. Clayton
Mining Geologist

Georgetown, Colo.
Nov. 5, 1880.

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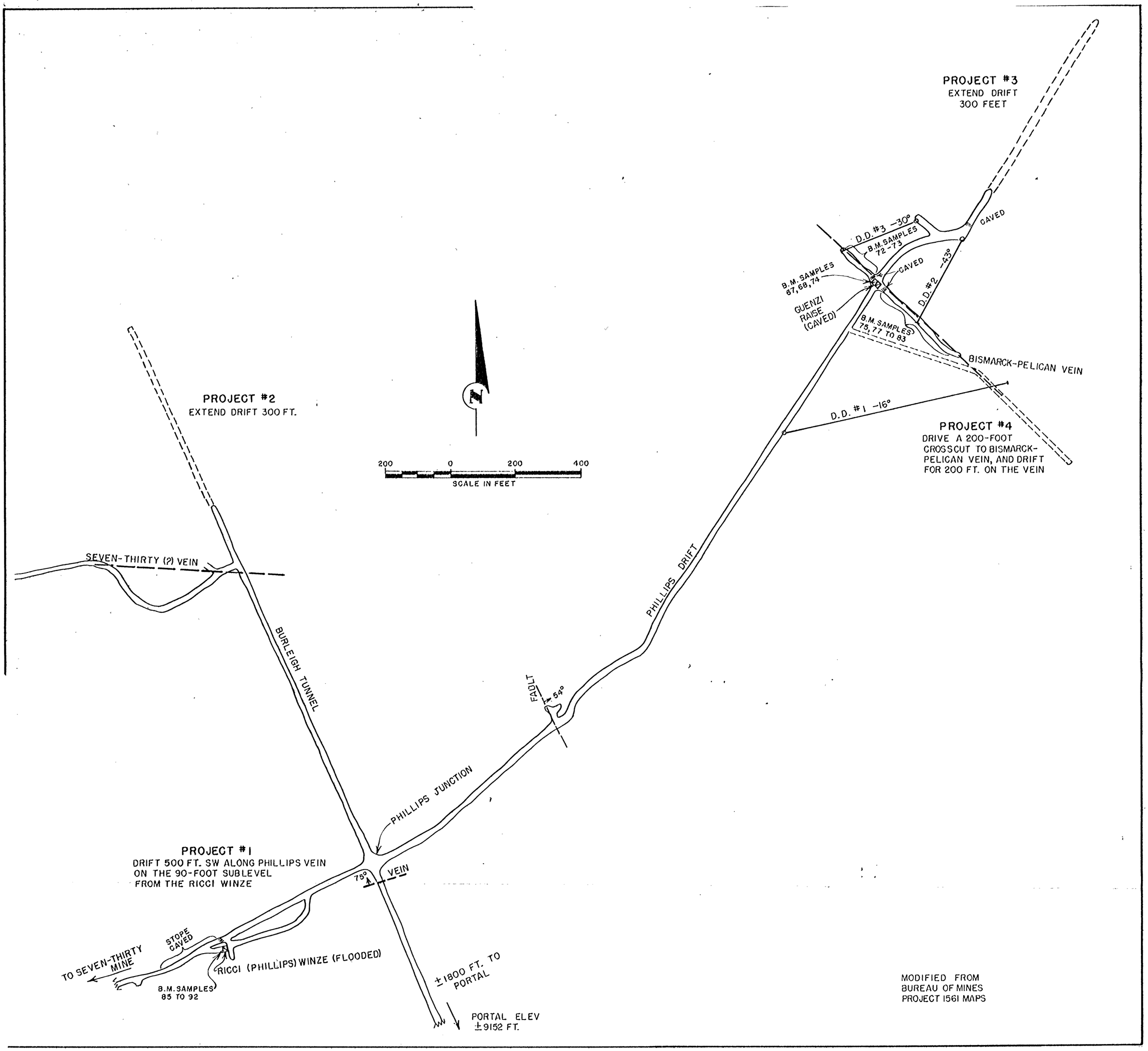
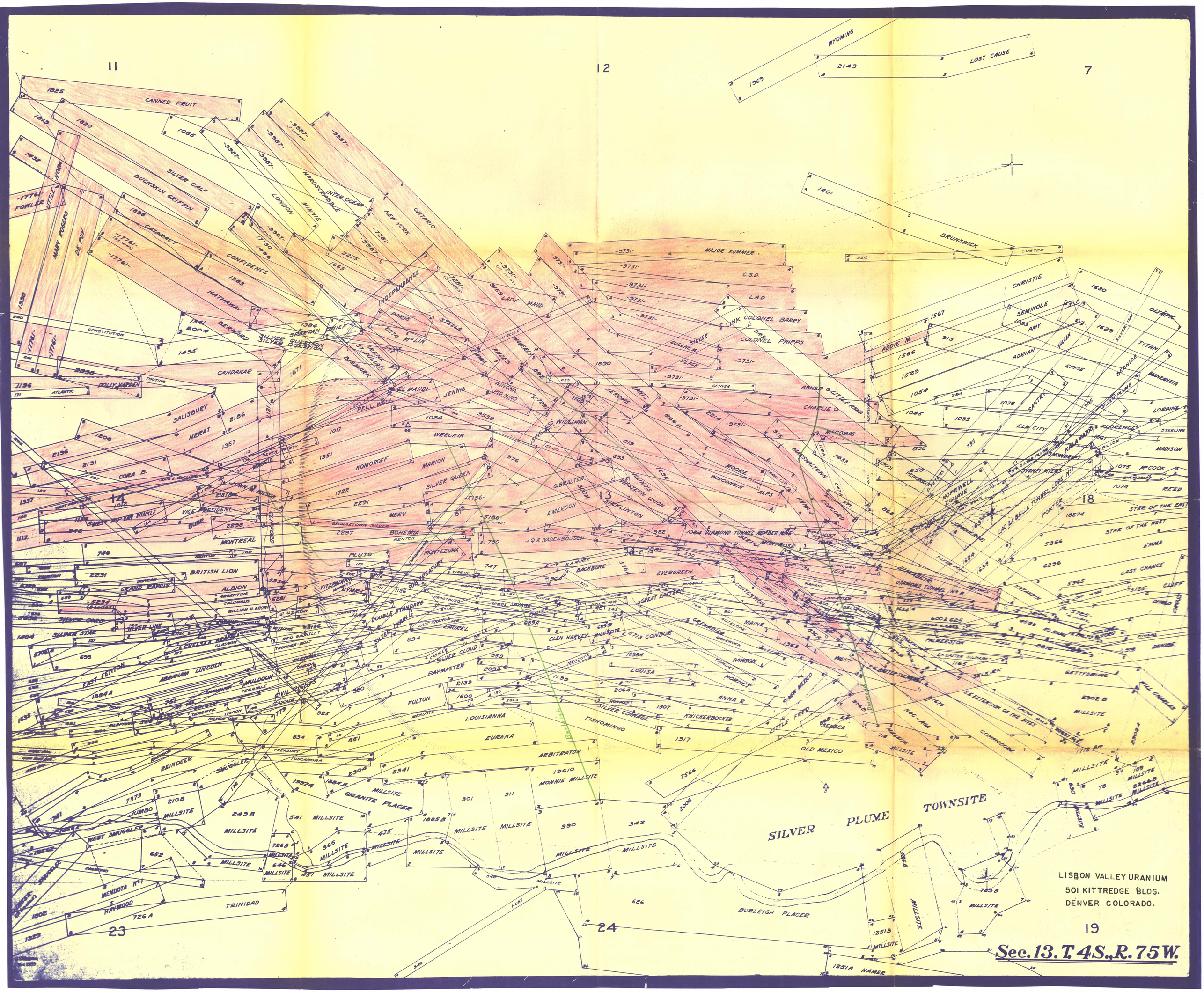


FIGURE 3- MAP SHOWING PROJECT AREAS FROM THE BURLEIGH TUNNEL LEVEL, SILVER PLUME MINING DISTRICT, CLEAR CREEK COUNTY, COLO. DMEA 4462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WYOMING
LOST CAUSE
BRUNSWICK
CORTEZ
CANNED FRUIT
SILVER CALF
BUCKSKIN GRIFFIN
CATARACT
CONFIDENCE
HATHAWAY
BERNARD
CONSTITUTION
CANDAHAR
DOLLY VARDEN
TOOTING
ATLANTIC
MARY ROGERS
DE PUY
FOWLER
LITTLE YORK
LONDON
MINNIE
HARDSCRABBLE
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NEW YORK
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PARIS
McLIN
STELLA
EMMA
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MAJOR KUMMER
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COLONEL PHIPPS
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McCOMAS
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SEMINOLE
AMY
ADRIAN
VULCAN
EFFIE
SANTA FE
ELM CITY
FLORENCE
WILCOX
SNOWDRIFT
KIMBALL
SILVER PLUME
SYDNEY MYERS
OLYMPIC
TITAN
ARENICA
MANZANETA
LORAINE
STERLING
MADISON
McCOOK
REED
STAR OF THE EAST
STAR OF THE WEST
EMMA
LAST CHANCE
CLIFF
DUDLEY
GETTYSBURG
MILL CHARLES
PORTER
LAC LA BELLE TUNNEL LODE No 1
HOPEWELL
COLUMBIA
PENDOCRIPPLES
DIAMOND TUNNEL No 1
DIAMOND TUNNEL No 2
DIAMOND TUNNEL NUMBER NINE
SIERRA
TATANDIN
PALMERSTON
E.K. BAXTER SULPHURET
SE EXTENSION OF THE DIVES
COMMODORE
HOG-ARE
SENECA
OLD MEXICO
NEW MEXICO
LITTLE FRED
WEST
MAINE
GREAT EASTERN
CONTENTION
EVERGREEN
BACKBONE
R.A MINER
MONTROSE
ALPS
WISCONSIN
MOORE
WESTERN UNION
ILLINOIS
GIBRALTER
BOOM
EMERSON
J.Q.A NADENBOUSCH
BOHEMIA
MERV
SILVER QUEEN
MARION
KOMOROFF
WRECKIN
JENNIE
EL MAHDI
PELL WALL
ST JULIAN
IRENE
BISMARCK
ANDES
WINONA
PIO NINO
JEROME
LANTZ
SWEDLAS WILLIAMS
ST JO
SILVER CHAIN
DOUBLE STANDARD
SUB TREASURY
LAUREL
ELLEN HARVEY
SILVER CLOUD
PAYMASTER
FULTON
LOUISIANA
EUREKA
ARBITRATOR
MONNIE MILLSITE
GRANITE PLACER
TISHOMINGO
SILVER COINAGE
KNICKERBOCKER
ANNA R
HORNET
DAWSON
LOUISA
CONDOR
GRENADIER
ANTELOPE
MAINE
CAPE HORN
MONTEZUMA
PLUTO
FITZPATRICK
EYMARD
SILVER STAR
SILVER LINK
CHELSEA
ABRAHAM LINCOLN
EAST TENTON
MULDOON
TERRIBLE
CASCADE
TICOON
SILVER ONE
CIVIL RIGHTS
REINDEER
SMUGGLER
TREASURY
TUSCARORA
JUMBO
WEST SMUGGLER
MENDOTA No 1
HAYWOOD
TRINIDAD
BURLEIGH PLACER
HUNT
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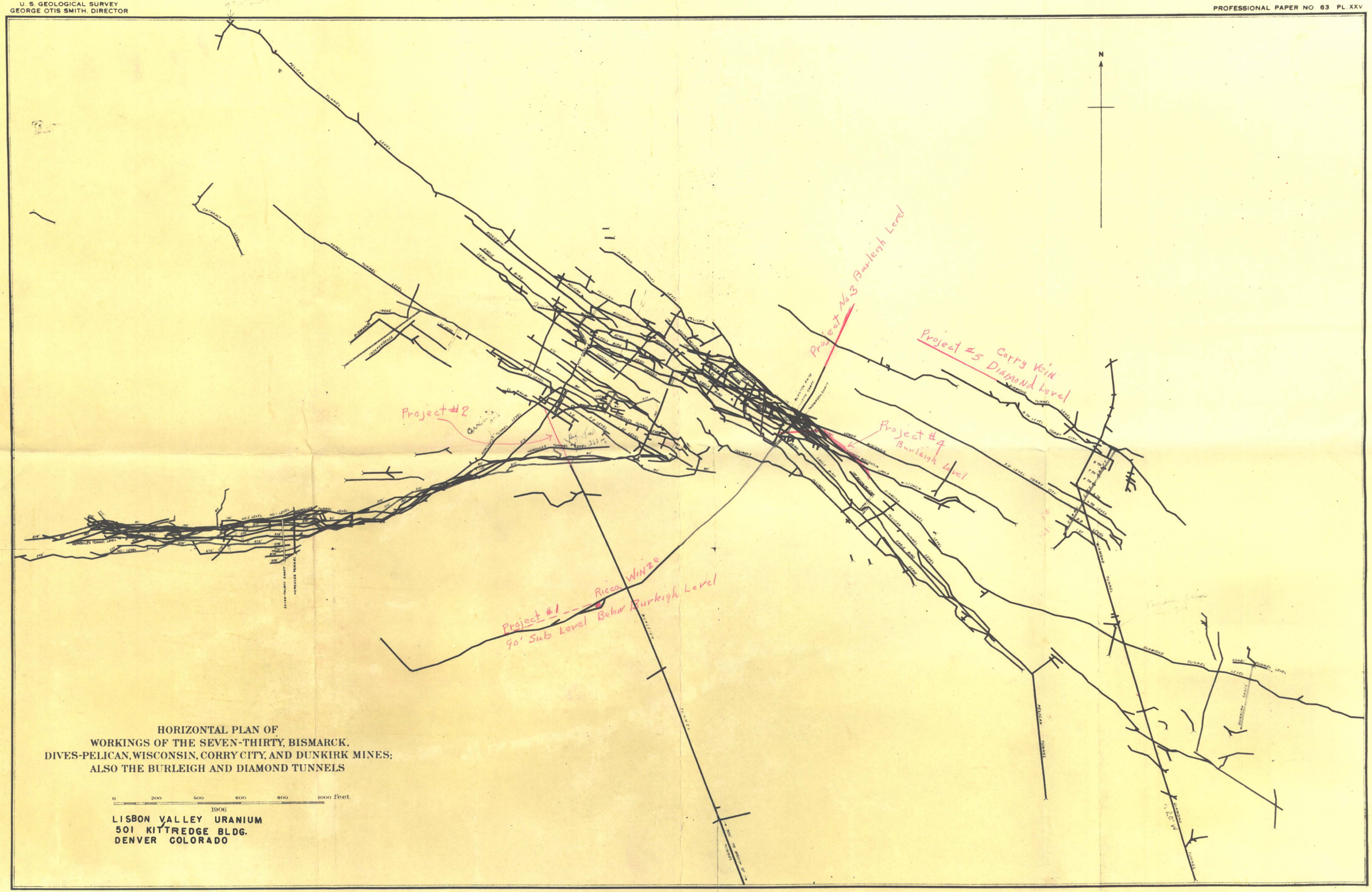

HORIZONTAL PLAN OF
WORKINGS OF THE SEVEN-THIRTY, BISMARCK,
DIVES-PELICAN, WISCONSIN, CORRY CITY, AND DUNKIRK MINES;
ALSO THE BURLEIGH AND DIAMOND TUNNELS

0 200 400 600 800 1000 feet

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