DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 5000

Application
- [x] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [ ] Project summary (final)
- [ ] Work Comoleted analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [ ] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No._____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

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

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 5 1958

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado
May 1, 1958

Memorandum

To: Secretary to the Operating Committee

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA aid (Lead-Zinc-Silver) Columbine Metals, Inc. (Pelican-Dives, Seven Thirty group) Clear Creek County, Colorado

Enclosed are three copies of the subject application. One copy is being retained in our file.

The Applicant's proposed exploration consists of drifting, raising, and rehabilitation at an estimated cost of $166,325.70. The proposed exploration is vague and poorly presented.

Under property rights the Applicant states, "The land is owned by Columbine Metals, Inc. and there are no liens, mortgages, or other encumbrances on the property." However, nothing has been presented to show how Columbine Metals, Inc. obtained the title to the property.

A review of our records shows that part of the land proposed for exploration is covered by certified contract No. Idm-E37 to John A. Smith and Ben A. Smith. An application was later submitted by Lisbon Valley Uranium Company, Docket No. DMEA 4462, which was denied by the Administrator's letter dated January 14, 1957.

E. N. Harshman

E. N. Harshman

COLUMBINE METALS, INC.
501 Kittredge Building
Denver 2, Colorado

OFFICIAL FILE COPY
RECEIVED MAY 5 1958
CODE

DMEA
DEPARTMENT OF THE INTERIOR
APR 30 1958
REGION III
DENVER, COLORADO

April 30, 1958

Mr. William H. King
Executive Officer, DMEA
224 New Custom House
Denver 2, Colorado

Dear Mr. King:

Enclosed herewith in quadruplicate are copies of MF 103, Revised Oct. 1957, Application For Aid In An Exploration Project with the following illustrations:

Figures

No. 1 - Claim map
No. 2 - Horizontal plan of workings of the Seven Thirty, Bismark, Dives Pelican, Wisconsin, Corry City, and Dunkirk Mines. Also the Burleigh and Diamond Tunnels.
No. 3 - Longitudinal Verticle Section - Dives Pelican Mine.
No. 4 - Map showing veins and porphyry dikes of the Silver Plume Region, Colorado.
No. 5 - Columbine Metals, Inc. vein system and ore shoots.

Exact locations of the work can not be placed on Figure 2 until a survey is made of the mine workings. However, Figure 5 showing the vein system and ore shoots gives the approximate location of the proposed work.

Cordially yours,

W. D. McMillan
Managing Vice-President

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 5 1958
DATE | INITIALS | CODE

COLUMBINE METALS, INC.

Report on the

BISMARK-PELICAN, WISCONSIN-CORRY CITY, SEVEN-THIRTY,

DIVES, DUNKIRK & BAXTER MINES

Located at Silver Plume, Clear Creek County, Colorado

By

W. D. McMillan, Managing Vice-President

Also see report on the

DIVES-PELICAN AND SEVEN-THIRTY MINES

Located at Silver Plume, Clear Creek County, Colorado

By

O. O. McReynolds, Mining Engineer

Los Angeles, California

Form MF–103
Revised Oct. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42–R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

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

Columbine Metals, Inc.
501 Kittredge Bldg.
Denver 2, Colorado

RECEIVED MAY 5 D.M.E.A.

APPLICANT NOT TO USE THIS BLOCK

Docket Number	5000
Date Received	5-5-58
Government Participation %	
Region	III
Division Code	500

BUSINESS ORGANIZATION (Check one)

- Individual [ ]
- Corporation [X]
- Partnership [ ]
- Other (Specify) [ ]

State in which firm is organized Colorado

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
Grover E. Williams	932 S. 2nd, Montrose, Colo	Pres&Director
Albert T. Fischer	Box 373, Gd.Junction, Colo.	V-Pres, Sec, Dir
W.D.McMillan	1009 Grant, Denver, Colo.	Vice-Pres.&Director
James M.Knowles	140 Hall, Gd.Junc., Colo.	Treas&Director
Ray J.Boggs	Grand Junction, Colo.	Director
Fred F. Gottbrecht	Grand Junction, Colo.	Director

Mineral(s) for which you wish to explore
Lead, zinc and silver

Estimated Cost of Project
$ ~~166,325.70~~ $169,645.70

LOCATION OF PROPERTY

Name	County	State
Bismark-Pelican	Clear Creek	Colorado
Wisconsin-Corry City		
Seven Thirty		

GENERAL INSTRUCTIONS Dives, Dunkirk & Baxter

Before filling out this application, please read DMEA Order–I, Revised, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

CERTIFICATION

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

April 30, 1958
Dated

W D McMillan
BY (Signature) W. D. McMillan

Managing Vice-President
Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

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

(b) State your interest, if any, in operations stated in 2*(a)*.

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

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

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

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

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

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

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

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

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

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

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

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

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

Note – 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)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Revised.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 25960

1. Applicant's Property Rights

(a) State the legal description -

Section 13 - Township 4 South - Range 75 West

(b) State all the names by which you know the property.

It is also known as the Pelican Dives and the Seven-Thirty.

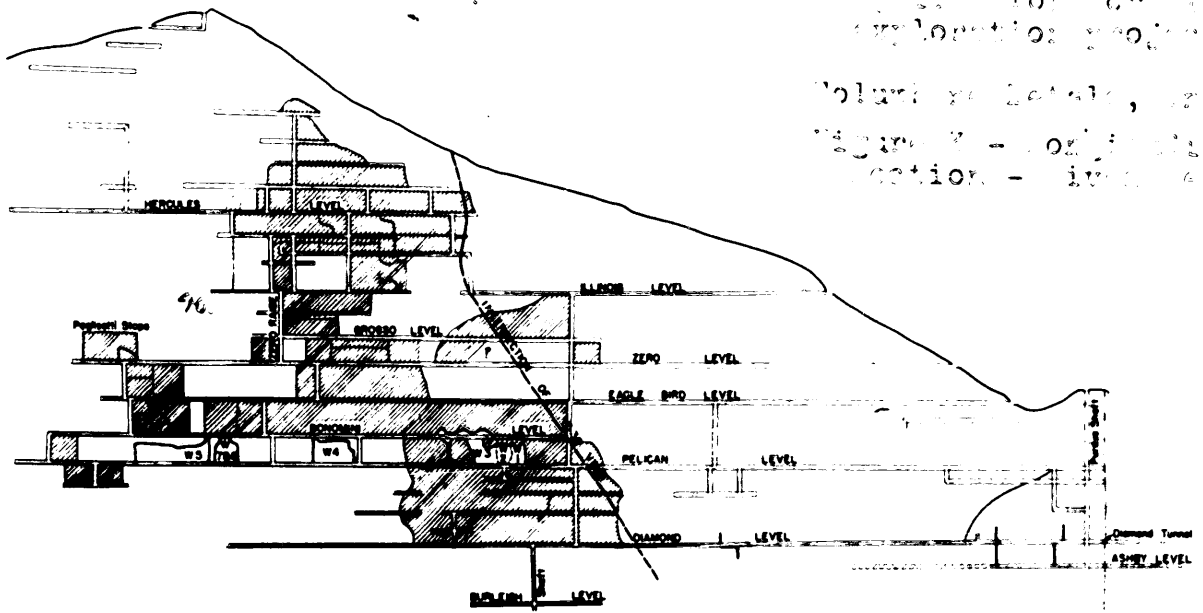
(c) State your interest in the land.

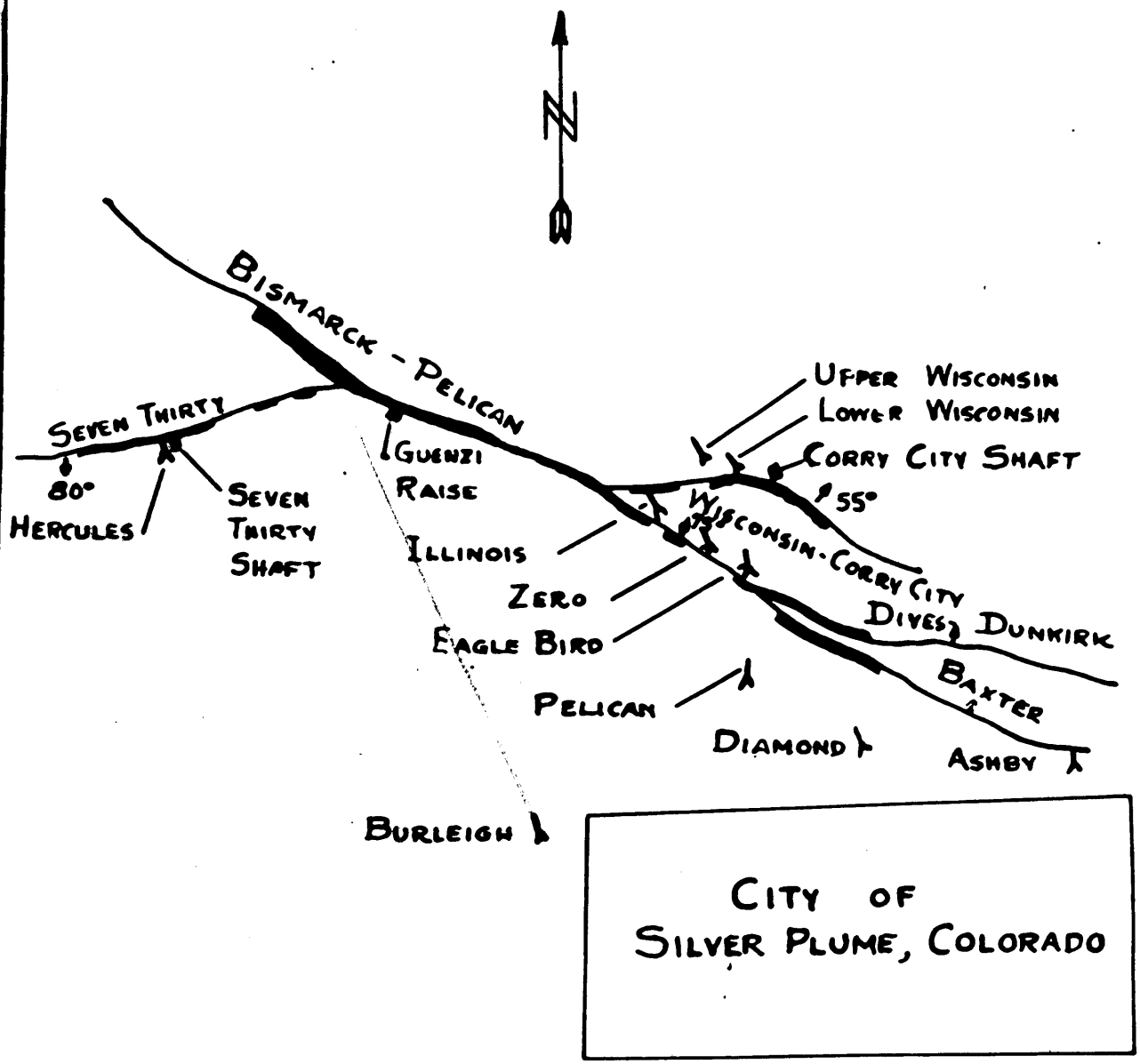
The land is held under lease, The present terms are $300,000 payable as follows: $5,000 upon signing of said contract; $45,000 due and payable 90 days after quiet title suit has been brought and completed (it is estimated that said suit will be started by September of 1958); and a 12½% royalty based on smelter returns per annum, payable, until $245,000 is paid, with a minimum payment of $50,000 per year. After full payment of the $300,000, a royalty of 5% on net smelter returns is payable to the estate of John A. Smith, deceased.

(d) Describe all liens, mortgages, or other encumbrances on the property.

None

OFFICIAL FILE COPY
DMEA
RECEIVED 5 1958


HERCULES
LEVEL
ILLINOIS LEVEL
Pushpull Stope
GROSSO LEVEL
ZERO LEVEL
EAGLE BIRD LEVEL
DONOSSO
LEVEL
W3
W4
PELICAN LEVEL
DIAMOND LEVEL
Diamond Tunnel
ASHLEY LEVEL
BURLEIGH LEVEL



VEIN OUTCROP
ORE SHOOT
ADIT LEVEL
SCALE: 1" = 1000'

Figure 5
COLUMBINE METALS VEIN SYSTEM
SILVER PLUME, COLORADO
OCTOBER 2, 1957
D.V. WATROUS E.M. 1570

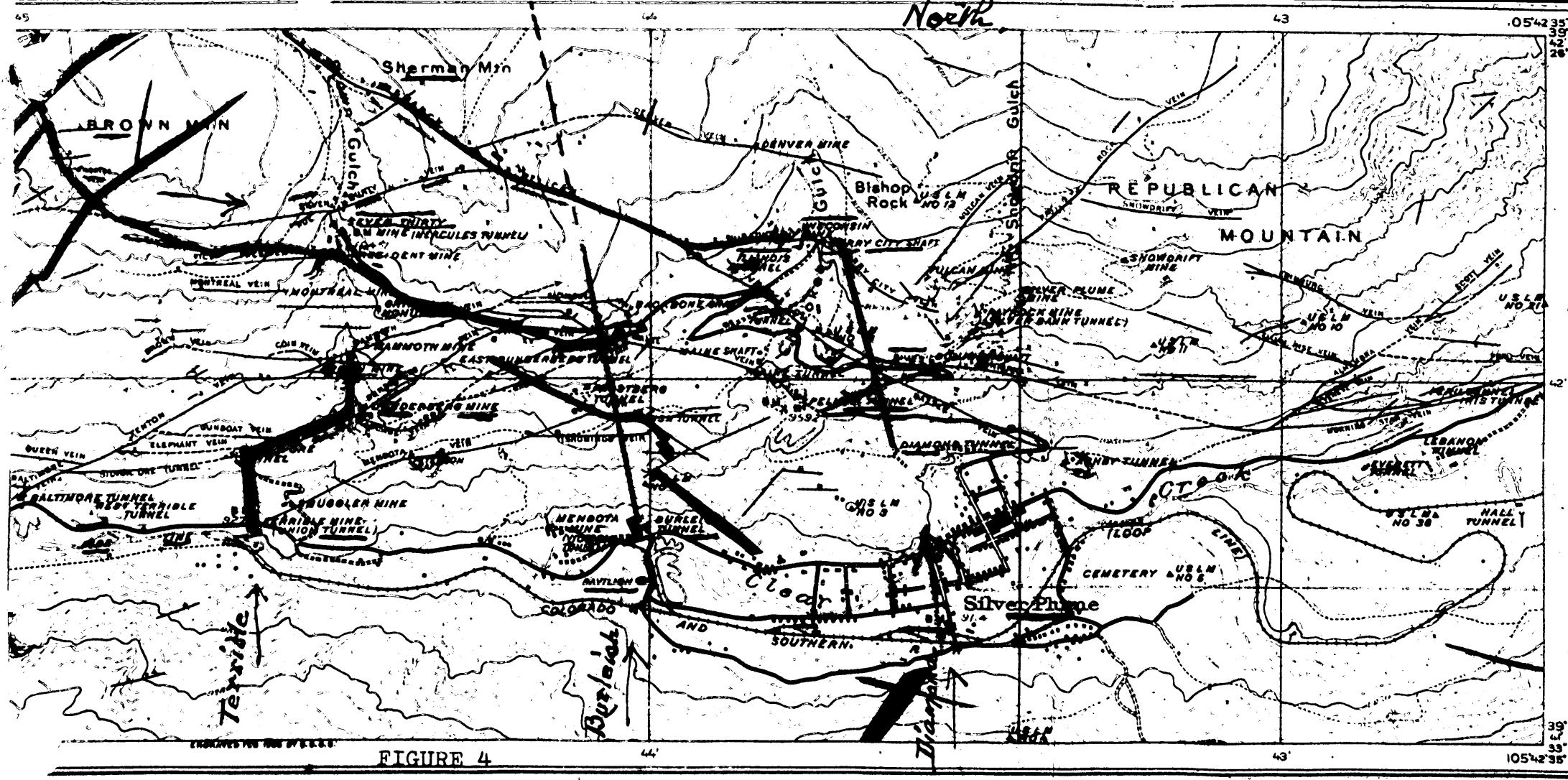


FIGURE 4

Douglas, Geographer.
k Tweedy, in charge of section
ography by Pearson Chapman.
gulation by Frank Tweedy.
rveyed in 1904

MAP SHOWING VEINS AND PORPHYRY DIKES IN THE SILVER PLUME REGION, COLORADO

Geology by J.E. Spurr and G.H. Garrey.

Scale $\frac{1}{12000}$

0 ¼ ½ ¾ 1 mile

1000 500 0 1000 2000 3000 4000 feet

200 100 0 500 1000 meters

Contour interval 50 feet.

Datum is mean sea level.

1906

Mineral veins

Porphyry dikes

See Exhibits

1. Applicant's Property Rights
   (a) Legal description
   (b) Names of the property
   (c) Interest in land
   (d) Liens, Mortgages, etc.

2. Physical Description
   (a) Mining or exploration operations
   (b) Interest in operations (2a)
   (c) Past and current production
   (d) Known ore reserves
   (e) Geologic features
   (f) Reasons for expecting to find ore
   (g) Geologic reports, assay maps, etc.

3. Accessibility of Project
   (a) Information for DMEA representative
   (b) Shipping and supply points

4. The Exploration Project
   (a) Proposed exploration project
   (b) Need of access road
   (c) Starting date

5. Experience

6. Estimate of Costs
   (a) Independent contracts
   (b) Personal services
   (c) Operating materials and supplies
   (d) Operating equipment
   (e) Initial rehabilitation and repairs
   (f) New buildings, fixtures, installations
   (g) Miscellaneous

7. (a) Furnishing of cost
   (b) How cost will be furnished

1. Applicant's property rights

   (a) State the legal description of the land. Section 13 - township 4 South - Range 75 West
   (b) State all the names by which you know the property. It is also known as the Pelican-Dives and the Seven-Thirty.
   (c) State your interest in the land. The land is owned by Columbine Metals, Inc.
   (d) Describe all liens, mortgages, or other encumbrances on the property. There are no liens, mortgages, or other encumbrances on the property.

BOOK 255 Page 177

ANNEX A

Attached to & forming a part of "Mining Lease & Option" dated July 13, 1956, granted by JOHN A. SMITH, Lessor to LISBON VALLEY URANIUM CO., a Colo. Corp., Lessee, covering mining property in Clear Creek Co., Colo.

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

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

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

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

All of 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.

All of 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 side lines of the said Dives claim.

Illinois	Lode Mining Claim	Survey Lot No.	892
Bertha	"	"	11698
Jerome	"	"	9159
Western Union	"	"	7281
Waverly	"	"	7281
Andes	"	"	7281
Ontario	"	"	9987
New York	"	"	9987
Hardscrabble	"	"	9987
Ninnie	"	"	9987
London	"	"	9987
Paris	"	"	9987
Emma	"	"	9987
Hercules	"	"	112
Seven-Thirty	"	"	136
John J. Roe	"	"	134
John J. Roe	"	"	212P
Pio Nino	"	"	772
Maggie	"	"	1012

Jennie	Load Mining Claim	Survey Lot No.	1017
William	" "	"	1024
Dolly Verden	"	"	1196
John M. Wilson	"	"	1206
Clifford	"	"	1217
Cora B.	"	"	1337
Stella	"	"	1665
Buckskin Griffin	"	"	1819
Brand Hall	"	"	1824
Canned Fruit	"	"	1825
Exposition	"	"	1845
EL MAHDI	"	"	2186
Lady Cunning	"	"	1848
Komeroff	"	"	2187
Herat	"	"	2191
Salisbury	"	"	2196
Ameer	"	"	2233
Candahar	"	"	2238
Winona	"	"	2274
Lady Maud	"	"	2275

Cabul	Lode Mining Claim	Survey Lot No.	2284	Quetta	Load Mining Claim	Survey Lot No.	5352
Silver Queen	"	"	2291	Pell Wall	"	" "	1357
Merv	"	"	2296	Wreckin	"	"	1351
Albion	"	"	5234	Bismark	"	"	1383
Cymri	"	"	5234	Independence	"	"	1671
Gibralter	"	"	5186	Bohemia	"	"	2297
Emerson	"	"	5186	Fitzpatrick	"	"	6281
Afgan	"	"	5352				

Silver Calf claim, survey lot no. 1820, excepting that certain fractional part heretofore conveyed to J.M.S. Egan by deed April 10, 1883.

Edwina claim, Survey Lot No. 2290, excepting that certain fractional part heretofore conveyed to John M. Frazier by deed dated 6/18/86.

McLin claim, Survey Lot no. 1384, excepting that part conveyed and described in deed recorded in Book 70, Page 21, in the office of the Clerk and Recorder of Clear Creek Co., Colo.

The Cataract claim, Survey Lot No. 1432, excepting that part heretofore conveyed and described in deed recorded in Book 70, Page 301 of said office.

The West 575 feet of the J.Q.A. NADENBOUSCH Claim, Survey Lot No. 780.

The West Half of the Rolland Claim, Survey Lot No. 1115.

An undivided 7/8 of the Brunswick claim, survey lot #1401.

An undivided 1/3 of the St. Joe claim, Survey Lot #184.

Little Nora	Lode Mining Claim	Survey Lot No.	1938	Isinglass	Lode Mining Claim	Survey Lot No.	878
Marion-Undivided 1/4	"	"	1722	West Hercules	"	"	140
Little Jo	"	"	1937	John F. McClung	"	"	135
Boom	"	"	9538	Alps	"	"	893
Burr	"	"	946	Kirklington	"	"	976

The West 220 feet of the West Rip Van Winkle claim, Survey Lot # 1117.

Those certain tunnels known as the Hercules and Stump Tail.

The Montezuma Claim, Survey Lot # 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 approach thereto from the adjacent wagonroad.

The Snodgrass or Paul Tunnel.

The Pelican Tunnels numbers 1, 2, & 2-1/2.

The right & privilege of dumping upon and across the surface ground of the East 350 feet of the Montreal 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 Henage H. Griffin by the Montreal Gold and Silver Mining Co. by deed 3/26/84, recorded in BOOK 79, PAGE 332, in the office of the Clerk and Recorder, Clear Creek Co., Colo.

That certain Placer claim designated as Survey Lot # 686 and containing 19.01 acres, with all improvements thereon.

That certain Millsite and Water power designated as Survey Lot # 330, with all improvements thereon, excepting, however, so much of said ground described by metes and bounds as follows: beginning at the corner # 3 of said survey lot # 330, thence South 9 degrees and 15 minutes East 368.4 feet; thence North 80 degrees and 45 minutes East 150 ft.; thence North 9 degrees 15 minutes West 68.4 feet; thence South 80 degrees 45 minutes West 150 feet to the place of beginning.

That certain Millsite designated as Survey Lot # 342, and also that certain right of way thru and across Survey Lot # 340, as described in deed recorded in BOOK 41, Page 235, Clear Creek Co., together with all improvements thereon.

Millsite, Survey Lot # 311, consisting of 1-1/2 acres, more or less and a two-thirds interest in the dam situated thereon, and the right to construct a ditch across Millsite, survey lot # 301, excepting, however, from survey lots # 301 and 311 the property described in a deed dated 4/18/77 and recorded in BOOK 41, Page 235, Clear Creek Co.

The Burleigh Tunnel.

The Alice Millsite, the location certificate of which is recorded in BOOK 431, Page 479, Clear Creek Co.

Also the following patented lode mining claims:

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

BOOK 255 Page 180

Also the following unpatented lode mining claims:
Horrible, Big Gun, Cossack, Wild West, Manhattan, New Era, Advance, Hunt, Ryder, and I. Phillips.

The Monnie Millsite, Survey Lot # 19610. This property is included in a deed J.N. Robeson and G.L. Cole to Silver Plume Mines Co., recorded in BOOK 193, Page 567 in Clear Creek Co., Colo. Also the remaining undivided two-thirds of the St. Joe claim, Survey Lot # 184, being the same premises conveyed to East Butte Copper Co. by deed from Raymond C. Gee and Gordon P. Henderson by deed dated 6/14/35/

All of Lot 5, in block 14 in the town of Silver Plume, together with all the improvements thereon.

All of that portion of lots 3 and 4, block 14, in said town of Silver Plume, described as follows: beginning at the SW corner of said lot, thence 23° 15' W 80 ft., thence N66° 48'E 50 ft., thence S23° 15' E.55 feet to a point 35 ft. from the S.E. corner of said lot, thence southerly across said lot to the place of beginning, containing in all 5975 sq. ft. 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, survey lot # 836B, all being contained in the aforementioned lot # 4 in block # 14, together with all improvements thereon.

North 73 ft. of lot # 1, Blk. 16 and improvements. Hocage Millsite (2.03) acres more or less, survey lot # 836B, all situate in the town of Silver Plume.

Dunkirk	Lode Mining Claim	Survey Lot No.	200	Diamond #8 Lode Mining Claim		Survey Lot No.	1019
James A. Gage	"	"	201	Diamond #-8-9	"	"	982
Perralto	"	"	202	Selkirk (E 900 ft.)	"	"	868
Anna J.	"	"	866A	West E.K. Baxter			
Corry City	"	"	344	(undiv. 3/4)	"	"	1363
Concord	"	"	2214	Millsite	"	"	718

Abner G., Addie M., Charlie O., Col. Phipps, Col. Barry, C.S.D., Eugene M., Flak, L.A.D., LANTZ, McComas, and Major Kummer Lode Mining Claims, all survey lot # 9731.

Moore	Lode Mining Claim	Survey Lot No.	1109	Wisconsin	Lode Mining Claim	Survey Lot No.	919
Silver Link	"	"	1890				

The Diamond Tunnel with all track and improvements.

ANNEX B

Pay Rock Group of Lode Claims as follows:

Pay Rock	Lode Mining Claim	Survey Lot No.	398	Englewood	Lode Mining Claim	Survey Lot No.	2266A
Silver Plume	"	"	102	Santry	"	"	1055
Silver Star	"	"	121	Katahdin	"	"	862
Bernice	"	"	905	Zouave	"	"	1056
Sidney Meyers	"	"	650	Conquerer (W. 1200 ft.)	"	"	1433A
Silver Point	"	"	397	Penobscott	"	"	1900I

Together with crosscut tunnel, known as the Ashby Tunnel, approximately 3700 feet long, undercutting the above claims.

2. Physical Features
   (a) Describe in detail and illustrate with maps all mining and exploration on the property.

The various properties comprising the mining group owned by Columbine Mines, Inc. consist of the Bismark-Pelican, Wisconsin-Curry City, Seven Thirty and the Dives, Dunkirk, and Baxter vein systems, with 108 patented mining claims embracing approximately 300 acres.

2. Physical Features

These were discovered between 1866 and 1870. Ten adit levels have been driven at various elevations on Brown and Sherman Mountains north of Silver Plume, and there are over 25 miles of workings.

The following mining and exploration has been done on the properties.

Bismark Pelican Vein

The vein system has a northwest-southeast strike and dips steeply to the northeast, and has been developed over a length of 2500 feet, a vertical distance of 1800 feet in a fractured zone of from 10 to 250 feet.

This production has resulted in the production of from 40,000 to 75,000 tons of lead, zinc, silver and gold ores.

Wisconsin-Curry City

The vein system has been developed by an 849 foot shaft and numerous adit levels from the surface. The strike of the vein system is eastwest from the southeast end of the Pelican-Bismark ore shoot, and has a length of about 806 feet over an average width of 20 feet, with four to six feet in the center of high grade ore. This development has resulted in the production of approximately 5000 tons of lead, zinc, silver and gold ores.

Seven-Thirty Vein

The vein system with a strike approximately east-west near the center of the Bismark-Pelican ore shoot has been developed by a 900 foot shaft with levels in a 700 foot ore shoot with a width of from 10 to 40 feet.

This work has resulted in the production of approximately 10,000 tons of lead, zinc, silver and gold ores.

Dives, Dunkirk and Baxter

These vein systems have been developed by south-easterly trending ore shoots near the southeastern end of the Bismark-Pelican vein system and have been worked through numerous surface adits and through the Diamond and Ash by levels.

The length of the ore shoot on the Baxter is approximately 500 feet long and on the Dives Dunkirk - 700 feet long. This development has resulted in the production of approximately 5000 tons of similiar ore to the other vein systems.

The above vein systems are shown in Plate XXV, U.S. Geological Survey Professional Paper 63, Horizontal Plan of Workings of the Seven-Thirty, Bismark, Dives Pelican, Curry City and Dunkirk Mines, also the Burleigh and Diamond Tunnels.

In a report by G.W. Tarkington, Superintendent of the Silver Plume Mines, Inc., for 17 years, he submitted Longitudinal-Vertical Section, which is given in Figure 3.

(d) Describe the known ore reserves on the property giving quantities, grades, and sampling methods used, with copies of assay certificates and maps if available.

There are no known ore reserves, however, indicated ore reserves on the Bismark-Pelican, Wisconsin-Curry City, Seven Thirty and Dives, Dunkirk, Baxter mines are estimated at a total of 623,000 tons of lead, zinc, silver, gold ore above the Burleigh Tunnel. Copies of assay certificates and maps are not available, but the ore is assumed to have the same unit contents as the past production, supplemented partly by engineers report.

Quantities of each of the mines are described below.

Bismark-Pelican

The Bismark-Pelican Mine has indicated reserves of 260,000 tons between the Diamond Tunnel and Burleigh Tunnel, a distance of 190 feet, based on a length of 1650 feet, a width of 10 feet and a height of 190 feet, a total of 3,135,000 cubic feet, which at 12 cubic feet per ton is equivalent to 260,000 tons.

Geologists of the U.S. Geological Survey examined the Diamond Level from the portal to the Guenzi Winze, a distance of 850 feet southeast from the Winze and found favorable ground. Old reports state there is favorable ground for another 800 feet northwest of the Winze.

2. Physical Features

Wisconsin-Curry City

The Wisconsin-Curry City Mine has a proven length of ore of 800 feet on the Diamond Level with the following dimensions: length 800 feet, width 5 feet, depth to Burleigh Level - 190 feet, volume 760,000 cubic feet equivalent to 63,500 tons.

Seven-Thirty

The Seven-Thirty Mine has a proven length of 700 feet of ore by drifts from a shaft that bottomed 290 feet above the Burleigh Level with the following dimensions: length - 700 feet, width - 10 feet, depth to Burleigh Level - 290 feet, volume 2,030,000 cubic feet, equivalent to 170,000 tons.

The Seven-Thirty Vein is about 250 feet northwest of the present end of the Burleigh Tunnel.

Dives, Dunkirk, Baxter

The Dives, Dunkirk, Baxter mines have a proven total length of ore shoots 1200 feet with 500 feet on the Baxter and 700 feet on the Dives-Dunkirk as shown by development on the Diamond and Ashby Levels, 190 feet above the Burleigh Level. The approximate dimensions of the known ore reserves are 1200 feet in length by 10 feet in width by 190 feet to Burleigh Level.

Summary of Reserves

	Tons
Bismark-Pelican	260,000
Wisconsin-Curry City	63,500
Seven Thirty	170,000
Dives, Dunkirk, Baxter	190,000
Total	643,500

In addition to the above reserves, O.O. McReynolds, Mining Engineer, examined the Dives, Pelican-Bismark, and Seven-Thirty mines in 1903, and copies of his report are attached, as they contain pertinent information on Pages 11 to 17 inclusive, relative to production and estimated ore reserves.

On page 12 of this report, McReynolds estimates that the old stopes contain 1,184,000 tons of mill ore with a value of $6.50 per ton, which would be at present prices about $26.00 per ton, which is partly confirmed by G.W. Tarkington on the average values of stope fill of 30 pounds of lead, 140 pounds of zinc, and 70 ounces of silver with a gross value of $23.30 per ton.
Tarkington is superintendent of the Dives - Pelican and Seven Thirty Mines and a copy of his records are on file with Columbine Metals, Inc.

2. Physical Description

(e) Describe by narrative and maps the geologic features on the property, including ore minerals, geologic features, and type of deposit.

On the Bismark-Pelican, Wisconsin-Curry City, Seven Thirty, Dives, Dunkirk and Baxter vein systems, the ore is found in fissure veins, traversing the Colorado complex of pre-cambrian granite, gneiss, and schist, extensively invaded by Silver Plume granite. Pegmatite dikes cut the rocks in intricate patterns, and the whole has been intruded by Tertiary dikes of alaskite and monzonite. The latter intrusives are pre-mineral in age, though it is believed that ore deposition was closely related to, and immediately followed the last intrusions.

The veins trend to the northeast and southwest and have fairly steep dips to the northeast. The ore bodies range in length from 2500 feet in the Bismark-Pelican to 500 feet in the Baxter; in vertical distances from 1800 feet in the Bismark-Pelican to 850 in the Wisconsin-Curry City. Widths of the ore bodies vary from a few feet up to 250 feet of several parallel ore bodies, high grade ore bodies usually ranging from 4 to 10 feet. The ore minerals are principally sphalerite, marmatite, galena, fetrahedrite, pyrite and polybasite. Marmatite and sphalerite are more abundant than galena, and the zinc minerals are generally black in color with some of the yellow variety (Black Jack and Rosin Jack). They are usually in solid bands of crystalline mineral with subordinate galena dispersed in them.

A map from U.S. Geological Professional Paper 63 showing veins and prophyry dikes in the Silver Plume Region, Colorado, is enclosed.

(f) State reasons you expect to find ore assays.

2. Physical Description

Columbine Metals, Inc. expects to find ore under the exploration project of the Bismark-Pelican, Wisconsin-Curry City, Seven Thirty, and Dives, Dunkirk and Baxter veins for the following reasons:

1. Indicated reserves of over 600,000 tons on these veins contain, according to production records, 14% lead, 20% zinc, 150 ounces of silver and O.10 ounces of gold.

2. The former production from these mines of 120,000 to 199,000 tons.

3. Engineer reports by D.V. Wattrous and O.O. McReynolds. (Two copies enclosed).

3. Accessibility of the project.

(a) W.D. McMillan, consulting engineer geologist and Jim Knowles, Mine Operator, can be contacted at the office of Columbine Metals, Inc., 501 Kittredge Building, Denver, Colorado. Telephone - Acoma 2-2841.

The property is easily reached from Denver, Colorado, to Silver Plume, Colorado, via U.S. Highway 6 through Idaho Springs and Georgetown, a distance of 50 miles. Directions to the portal of the Burleigh Tunnel can be obtained at the Buckley Bros. Store, with a Conoco station, at Silver Plume.

(b) Shipping points are by truck lines at Silver Plume, with distances of 50 miles to Denver and 64 miles to Leadville.

Employees will reside at Silver Plume, Georgetown or Idaho Springs with distances respectively of 2 and 12 miles.

4. The Exploration Project

(a) Proposed exploration project.

The proposed exploration consists of drifting, raising and rehabitation as follows:

		Feet
Drifting		
1.	Complete to Illinois on the Seven Thirty Vein	235
2.	Extend the Burleigh Tunnel to cut the Seven Thirty Vein	200
3.	Extend the northeast and southwest drifts from the Guenzi Winze 200 feet each direction	400
	Total Drifting	835
Raising		
1.	Raise from Burleigh Level to the Diamond Level	200
2.	Raise from Zero Level to the ore body under the Illinois	200
3.	Raise on Corry City to Level 3	300
	Total Raising	700
Rehabilitation of part of the Zero Level		300

The location of this exploration is shown on Plate XXV of U.S. Geological Survey Professional Paper 63.

5. Experience

W.D. McMillan has had 17 years experience with the Department of the Interior, Bureau of Mine supervising projects for strategic and critical minerals, and as a mining engineer member of examining teams on DMEA applications from 1950 to 1958.

Gail Moore, P.O. Box 10, Silver Plume, Colorado, General Superintendent, has had 20 years of mining experience.

Several engineer-geologists with known experience are available on short notice if an exploration project is approved.

6. Estimates of costs

6. Estimate of costs

(a) Independent contracts - none

(b) Personal services (supervision, engineering and geological services, and labor) Basis - 1 year. Total footage - 2595 feet - incl. rehabilitation.

Supervision -

1 consulting engineer geologist	
2 days per week for 1 year at $100.00 per day	$10,400.00
1 supervising engineer @ $600.00 a month	6,000.00
1 general foreman @ $400.00 a month	4,800.00
Total supervision	$21,200.00
Contingencies - 10%	2,120.00
Total	$23,320.00

Labor -

2 shift bosses at $500.00 per month each	$10,000.00
5 miners - 287 shifts @ $800.00/shift	22,960.00
5 compressor operators - 287 shifts @ $80.00/shift	22,960.00
2 trammaire locomotive operators 287 shifts @ $32.00/shift	9,184.00
2 Eimco model 21 muching machine 287 shifts @ $32.00/shift	9,184.00
5 miners helpers - 287 shifts @ $60.00/shift	17,220.00
1 mechanic-electrician 287 shifts @ $18.00/shift	5,166.00
1 part-time surveyor @ $300.00 per month	3,600.00
Sub-Total Labor	$100,274.00
Contingencies - 10%	10,027.40
Total Labor	$110,301.40
Total Labor and Personal Services	$133,621.40

(c) Operating Materials and Supplies For 1035 feet of drifts - 207 Rounds
For 700 feet of 2 compartment raises - 240 Rounds (For cost purposes)

Explosives

Explosives per 5 foot round	Cost	No. Rounds	Total Cost
1 case dynamite	$ 12.10	447	$5,408.70
25 electric blasting caps at $.032 each	.80	447	357.60
2 blasting machines @	30.00		60.00
200 feet electric wire			20.00
Total Explosives			$5,846.30
1/4 drill steel - 12.00 each	3.00	447	$1,341.00
5 drill bits @ $.30 each	1.50	447	670.00
Miscellaneous tools			50.00
For rehabilitation of 300 feet on the Zero Level - 60M board feet of timber @ $80.00 per M			4,800.00 ~~480.00~~
Total operating supplies & materials			~~$2,541.00~~
Total			$12,707.30 ~~$8,387.30~~

(d) Operating Equipment - for 12 months - owned by applicant

	Book Value 12/31/57	Depreciation per month	Total
2 Atlas Coper Drills	$ 600.00	$ 10.00	$ 120.00
1 R. 38 Stuper	600.00	10.00	120.00

6. Estimate of Costs

3 Jackhammers	840.00	14.00	168.00
1 Air Hoist with	306.00	5.00	60.00
2 Eimco Model 21 Mucking Machine	1800.00	30.00	360.00
1 Gardrer Denver Mucking Machine			
2 Tramaire locomotives with extra air tanks	2400.00	40.00	480.00
1 450 c.f.m. imperial 10 compressor with electric motor	4200.00	70.00	840.00
1 100 S2 Le Roi Compressor with 100 H.P. Electric motor	6600.00	110.00	1320.00
10 mine cars	240.00	6.00	72.00
1 365 c.f. rg Chicago preumatic rotary compressor	6000.00	100.00	1200.00
		Total	$4742.00

(e) Initial rehabilitation and repairs - none

(f) New Buildings, fixtures, installations - none

(g) Miscellaneous

Repairs and Maintenance of equipment in 6 (d)	$ 600.00
Analytical work - 400 samples @ $3.00 each	1,200.00
Accounting - $100.00 per month - 12 months	1,200.00
Stenographic Work - 48 hours per month for 12 months 576 hrs. @ $2.00/hr.	1,152.00
Drafting - 60 hours per month for 12 months 720 hours @ $3.00/hr.	2,160.00
Workman's Compensation - 3.33% of $133,620	4,449.00
Unemployment Compensation - 3% of $133,620	3,006.00
Public Liability	1,800.00
	$19,575.00

THE DIVES-PELICAN AND SEVEN-THIRTY
Location and General Characteristics

See U.S.G.S Prof. Paper No. 63.

This property is located at Silver Plume, Clear Creek County, Colorado. Silver Plume is the terminus of the Colorado Southern Railroad Company's narrow gauge line from Denver. The distance from Denver to Silver Plume is fifty-two miles. Georgetown, the county seat of Clear Creek County, is two miles east of Silver Plume. There are excellent wagon roads running from these mines to the railroad at Silver Plume and to the sampling works at Georgetown which buy the ores as agents for the smelters. These wagon roads are so located that they are open to traffic throughout the year. They are kept in excellent repair, since they belong to the county, and it is from the vicinity of this property that the county receives a very large proportion of its income in taxes.

The immediate district in which this property is located holds the record for the highest average grade of ore shipments of any mining district in the world. The average grade of ore mined and sold in this district for the years 1891 to 1902, inclusive, being as follows: A 12 year average of $98.00 per ton.

1891	$120.60	1897	$ 95.00
1892	108.70	1898	99.30
1893	94.20	1899	99.45
1894	90.40	1900	100.42
1895	85.93	1901	96.32
1896	82.20	1902	80.00

During 1902 the smelters became short of silicious ores, and in order to supply the deficiency, they secured from this district some 1,200 tons of dump ore running about $15.00 a ton. This ore would not otherwise have been shipped, and it is accordingly not included in the average of 1902.

The continuity of the veins and the uniformity of the occurrence of the ore bodies have been demonstrated by many years of mining and many miles of underground workings. The uniform regularity with which the veins have been proven to carry ore, enables mining operations to be conducted with almost unequaled assur-

ance of steady profits, even in instances where ore bodies have not yet been disclosed, and a vein without extensive developments has a value beyond that usually accorded undeveloped veins. The veins are fissure veins, and can be worked to as great a depth as human ingenuity can devise methods of hoisting ore.

The property covers approximately 250 acres of territory and is made up of some eighty-eight patented claims, and twenty-one unpatented claims, as will be seen from Map A, the property is located immediately adjoining the railroad and Clear Creek, which is a bold stream the entire year around and runs through the mill sites belonging to this property.

While the ores carry some gold, the main values lie in silver and lead. Probably the most desirable form of mining for precious metals and the demand by the smelters, for they not only supply their own fluxing material, but greatly assist also in smelting more refractory ores. Accordingly, the smelter charges on such ores are low, and in some instances where the lead content is very high, no smelting charge whatever is made; however, such ores usually occur in quantities larger and steadier than gold-bearing ores so that they can be mined with stronger assurance of uniform profits. The result is that there is now a greater demand for silver-lead mines than for any other kind of precious metal mines, and this demand is constantly stronger, for the reason that the need for the ores of this character is steadily increasing. Some of the most profitable mines in the world are silver-lead mines, notably the Commodore and Revenue Tunnel mines of Colorado and the Silver King and the Daily-West mines of Utah.

The ores of this property are of two kinds: The high grade smelting ores, which are shipped directly to the smelters without the necessity for any kind of treatment at the mine; and the low grade concentrating ores, which form by far the larger part of the ores produced.

HISTORY:

The history of these mines is extremely interesting, but I will not enter into detail further than necessary for the purpose of this report. The property consists of Two main groups of claims, which are themselves the results of the consolidation and combination of numerous other properties. These two groups are called the Dives-Pellican and the Seven-Thirty. The two properties are really distinct mines, each with its own workings, although connections have been made between them, and in the subsequent course of this report they will be kept SEPARATE in the discussion.

The Dives-Pellican, as the name indicates, was originally formed by the consolidation of two claims, one called the Dives and the other the Pellican. These properties were located about the year 1870, and produced large quantities of very rich ores from the date of their location to the present time. They were subsequently united under one ownership, and other properties added from time to time. They have been worked continuously from the date of their location to the present time.

The Seven-Thirty Mine was located about the same time as the Dives-Pellican and consisted originally of the single Seven-Thirty claim. A number of other claims, however, were accumulated under the same ownership, until 1896 the entire group known as the Seven-Thirty group was purchased by the owner of the Dives-Pellican. Upon the purchase of this property by the Dives-Pellican owners, it was at once shut down and work discontinued in it, for it was thought advisable to shut down the property until the Burleigh Tunnel could be completed to the bottom of the shaft, for this tunnel will enable the mine to be worked at much less expense than has characterised previous operations. The pumps were accordingly pulled up and the mine allowed to fill with water to the 275 ft. level, from which level the water runs out through the Dives-Pellican workings. The Burleigh Tunnel is now within 800 ft. of the bottom of the shaft and is being driven at the rate of 100 ft. per month.

The point of prime importance to be noted in connection with the history of these mines is that heretofore no attempt whatever has been made to handle the low grade concentrating ores which occur in such profuse quantities in all the workings of the mines. Indeed, it has been possible to handle such ores at a profit for only a comparatively few years. At the time mining operations were begun on these properties, and for many years thereafter, freight and smelting charges, and all operating expenses, were so high as to forbid the mining of any ore running under $30.00 a ton. The following table is illustrative of the difference in the prices in 1870 and in 1903 of the things necessary in mining;

	1870	1903
Giant powder, per pound	$ 1.00	.125
Steel per pound	.40	.08
Rope per pound	.60	.15
Iron per pound	.25	.03
Giant caps, per hundred	2.00	.55
Fuse per hundred ft.	3.00	.55
Lumber, per M	60.00	14.00
Candles per box	20.00	4.00
Nails per keg	20.00	3.00
Coal oil per gallon	3.00	.20
Wood per cord	8.00	3.00
Picks each	3.75	1.00

Labor per day	$4.00	$2.75
Teaming per day	12.00	4.00
Stamp mill per T	5.00	1.25
Smelting per T	60.00	7.00

The costs of smelting as sited above was the average charge from 1865 to 1870, and thereafter, for some years these costs ranged from $15.00 to 25.00 per ton.

However, for many years after operations were begun in these mines, the improved modern methods of handling ores by concentration and by chemical treatment were unknown. Indeed, in hardly any field of human activity have greater improvements been made in recent years than in the field of inventions for the effective and economical handling of low grade ores bearing the precious metals. The present development of Cripple Creek, and the prosperity of the South African Gold field would have been impossible ten years ago. Smelting processes have been greatly improved; the cyanide process, which wrought such wonders, was not put into practical use until 1892 or 1893, and improvements in machinery for concentration are being made almost daily. The result is that ores discarded as valuesless a few years ago can now be handled at great profit, and there is no safer or more lucrative form of mining than that of handling large bodies of low grade ores that have been made valuable by the inventions of recent years.

But, even had it been always possible to handle low grade ores at a profit, the fact that the mines have always been worked under the "leasing system" would have operated to prevent any attempt being made to handle them. Under the leasing system, as used in these mines, specified portions of the veins, usually blocks 100 x 100 ft, in surface area on the vein, are leased to miners who take out the ore at their own expense, paying to the owners a royalty of 50% of the value of the ore not above hauling, freight and smelting charges. Now this low grade ore would not be handled at a profit without concentration by a mill erected on the ground, and it is manifest that no lesser would have an interest in a mine large or lasting enough to warrant his erecting a mill, even if he had sufficient capital to enable him to do so; nor would a man of the class from which lessers for the most part come, have the capital to build and operate a mill, even though the ground covered by his lease was large enough to warrant his doing so.

The high grade ore in these mines is so closely associated with the low grade, however, that the former cannot be mined without shooting down large quantities of low grade, yet the latter is not taken out of the mine, but the bulk of that which is thus blasted down is left in the stopes on the timbers. So that during the many years that the mine has been operated, an immense amount of low grade concentrating ore has been accumulated on the timbers in the old stopes in this manner. Furthermore, in prosecuting strict development work, such as driving levels and tunnels, sinking shafts and making upraises, a very large quantity of still lower ore, as a general average has been accumulated in four large dumps. There has also gone into those dumps a portion of the low grade ore broken in stoping, for it has been necessary to get rid of a certain portion of the low grade ore material from the stopes, in order to afford room for the men to work. This dump ore is of a lower grade than that left on the timbers in the old stopes, because there is more barren matter mixed with it. All of this low grade ore, both that on the timbers in the stopes, and that in the dumps, can now be handled at a great profit, as will fully appear in the course of this report.

VEINS

There are many veins embraced in the area owned by this company. The title to each patented claim is based upon the discovery of an ore bearing vein. These veins are typical fissures, that is, they are veins in which the ore and veinstone occupy fissures or cracks in the earth, which have been formed by some deep seated crust movement. Such veins extend downward to an unknown depth, for the bottom of no fissure vein has ever been reached, though some have been worked to depths as great as five thousand feet. The two principal veins in this property upon which practically all of the development has been done are the Dives-Pellican-Eagle Bird-Bismark and Seven-Thirty. Some work has been done on two other veins, the Phillips and the New vein north of the Bismark. The location and course of these veins is shown on Map A.

BISMARK VEIN

Description:

This vein is the Eagle Bird and the Dives-Pellican, extended north-westerly from the junction of these two veins at a point near the east end of the property. This vein is variously called locally, the Dives-Pellican, the Eagle Bird and the Bismark. For the purpose of simplifying the language of this report we will hereafter speak of the vein as the Bismark.

The Bismark vein is an immense vein, or more properly speaking, a dyke of porphyry enclosed in granite walls, having a general course of north-west and south-east and dipping about 65 degrees north, the thickness of this vein is from 10 to 250 ft. This porphyry is no doubt, of a later origin than the granite country surrounding it, as is shown by the fact that no indications have been found that any of the veins in the granite on either side pass through or even enter it. This vein has been proven by actual workings to be persistent for a horizontal distance of about 6,000 ft. and for a depth of some 2,100 ft. In this vein the silver bearing ore of quartz occurs in well defined streaks, or lenses, of higrade ore containing polybasite, gray copper, galena, etc. The development has shown in many places, two, three and even four parallel streaks of smelting ore of this character in the vein. On one level for about 1,400 ft. in length, three parallel drifts were run on separate and distinct streaks of smelting ore and stopes put up from each of these drifts. The aggregate width of these stopes

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SILVER PLUME PROPERTIES

of

COLUMBINE METALS, INC.

LOCATION

This property, at an average elevation of 9,500 feet, adjoins the town of Silver Plume, Colorado, 48 miles west of Denver. Paved highways connect the property with the D&RG Railroad at Golden, Colorado, a distance of 36 miles, and with a lead smelter at Leadville, Colorado, a distance of 66 miles. Zinc concentrates will be shipped by rail from Golden to Amarillo, Texas, for marketing.

Weather will not interfere with operations and there is plenty of water available for milling. Mine labor and supplies are available in Silver Plume and other nearby communities.

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ACKNOWLEDGMENT

The writer found, upon examination of these properties that, although parts of the mine access levels were open for inspection, none of these access levels were opened or rehabilitated to a point where the veins and ore shoots could be examined. Therefore, this report has been compiled from a personal inspection of the accessible workings on the various properties, plus the writer's 25 years of knowledge of properties in this area; from U. S. G. S. Professional Paper No. 63 covering the Georgetown Quadrangle, published in 1908; reports and maps made by the U. S. G. S. in 1942; records from the Bureau of Mines, and also from reports and letters by the following:

J. E. Clayton, Mining Geologist	1880
Charles P. Baldwin, Mining Engineer	1880
George H. Bendle, Former owner	1880
Theo E. Schwarz, Mining Engineer	1881
John Higgins, Lessee and Superintendent of Wisconsin	1905
W. H. Homes, Mining Engineer	1905
Geo. E. Marsh, Mining Engineer	1905
Frank A. Maxwell, Mining Engineer	1909
C. R. Lantz, Former Superintendent	1911
G. W. Tarkington, General Manager Dives-Seven thirty properties	1905 to 1921
J. H. Bills, Mining Engineer	1918
J. H. Warner, Manager	1922
J. H. East, Jr. Mining Engineer	1916-?

J. H. Warner, Former Manager, Pelican Level From 1925-1926 operations		1933
Geo. B. McFadden & Sons, Consulting Engineers		1939
Roy Matlock, Mining Engineer		1939
H. N. Moore, Mine Engineer		1885
O. O. McReynolds, E. M.		1903
J. C. F. Randolph, Lessee		1897
J. H. Robeson, Mine Superintendent	1889 to	1903
Louis Vidler, E. M.		1903
James W. McClove, Met. Eng. (Dumps)		1912

PROPERTY

This Silver, Lead, Zinc property consists of 108, more or less, patented mining claims, and embraces approximately 300 acres. There are over 25 miles of mine workings. Ten adit levels have been driven at various elevations on Brown and Sherman mountains to reach the several veins and ore bodies.

Three main vein systems cross the property, namely the Pelican-Bismark, the Seven-Thirty, and the Wisconsin-Corry City. All are strong fissure veins.

During the past few years the Illinois, Zero, Diamond and the Ashby adit levels have been rehabilitated for about one-half their total length. This amounted to over 6,000 feet. It was found that the old workings were badly caved and opening the mines through these old workings would be very expensive. However, these levels are equipped with mine rail and air pipe.

The lower adit level (Burleigh) was rehabilitated to its intersection with the Guenzi raise to the Pelican-Bismark vein on the Diamond Tunnel level in 1957. The Burleigh level is located near the western city limits of Silver Plume, is in good condition and is the logical level to use in developing the various veins.

It is approximately 3700 feet from the portal to the Guenzi raise. The breast of the Burleigh, 600 feet forward from the turn to the Guenzi raise, is near the Seven-Thirty vein system.

Near the portal of the Burleigh, a 75 ton per day selective concentrating mill is located. This mill needs some slight alterations. The mine is equipped with rail, air pipe, and a compressor which will furnish about 400 cubic feet of air per minute.

HISTORY

The various properties comprising this mining group were discovered between the years 1866 and 1870. More than 300 men were working on these mines during the early years. The mining laws of 1866 allowed a claim to be only 50 feet in width. Due to the difficulty in following a vein outcrop on the surface, this narrow claim width caused much litigation as the veins would wander off the claim staked by the discoverer. This litigation continued until 1896 when the properties were finally consolidated into two groups. These two groups were then consolidated about 1910. The properties continued to operate until 1907 and produced over 15 million dollars. From 1907 to 1920, the properties were worked intermittently by lessees. During 1920 milling operations were started to mill the dumps and stope fills. This operation, although inefficient, continued until 1926, with most of the mill feed coming from mine dumps. Since 1926 the property has been inactive with the exception of some rehabilitation work during the last three years. It is felt that these properties ceased to operate in 1907 and in 1926 due to poor metallurgical results in milling the ore, the increased zinc content of the ore, and the lower silver values encountered in deeper levels of the mines.

The early time miners were accustomed to ores running 150 ounces of silver per ton. When the silver content dropped to 30 ounces, they became discouraged and closed the operations.

DESCRIPTION OF VEINS

Bismark-Pelican

The Bismark-Pelican is the strongest vein system and has the largest production record of any of the veins systems in the area. It's production is estimated at between 8 and 15 million dollars. This vein has a NW-SE strike and varies in width through a fractured zone of from 10 to 250 feet. Where the fractured zone was wide, only the high grade streaks were mined and the balance left in place.

The ore shoot on this vein is about 2500 feet in length and has been mined from the surface to the Diamond tunnel level, a vertical distance of about 1800 feet. The Burleigh level intersects this vein near the ore shoot 190 feet below the Diamond tunnel level. During 1943, the United States Geological Survey examined the Diamond tunnel level from the portal to a cave at the Guenzi winze. The workings were not accessible beyond this point. On their geological map they indicated ground favorable for exploration for a distance of 850 feet from the Guenzi winze southeast toward the portal and below the Diamond level. This portion of the vein has been stoped above the Diamond level. Old reports covering this vein state that the richest ore shoot on the vein extended from the Guenzi winze northwestward for a distance of about 800 feet, so that we should expect 1650 feet of favorable ground on the Pelican-Bismark vein at the Burleigh tunnel level. This would give a block of favorable ground 1650 feet long, 10 feet wide, and 190 feet in height, which would theoretically figure about 260,000 tons. It has been stated in old

reports that this ore zone has been mined for as much as 250 feet in width so that, for a large low grade deposit, this zone could produce a huge quantity of mill feed.

Ore Values: During the early operations, this vein, according to reports produced an ore averaging 150 ounces silver perton, 14% lead, 20% zinc, and .10 ounces gold per ton. Although the vein cannot be sampled at present, I believe you could expect this vein to carry at least 10 ounces silver per ton at the Burleigh level. The lead and zinc values at this horizon cannot be determined until development work has been completed.

The stopes are for the most part still full of broken ore and are estimated to contain approximately 500,000 tons of ore. From the Illinois level to the surface, these stope fills, 20 to 30 feet wide, are estimated by the former mine superintendent to average 10 ounces silver per ton, $1\frac{1}{2}$% lead and 6% zinc.

Granite, porphyry, and gneiss constitute the wall rock of the vein.

WISCONSIN-CORRY CITY VEIN

This vein system, which has produced over $1,000,000.00, strikes approximately east-west, and branches from the Pelican-Bismark near the south-east end of the Pelican-Bismark ore shoot. This vein has been developed by a shaft 849 feet deep, and by numerous adit levels from the surface, each one successively lower on the mountain. It has produced from the surface to the Diamond level. However, the best ore occurred within 500 feet of the surface. As observed on the Diamond level, this vein is approximately 25 feet wide. No samples were taken, as the ore could not be reached. Above this level the ore is said to run 20 to 50 ounces silver per ton across a

width of 35 feet. The value of this lode cannot be determined until it is developed through the Burleigh level. This vein is strong on the Diamond level, and is said to carry 15 ounces silver per ton, and should certainly extend to the Burleigh level.

The ore shoot on this system is said to be 800 feet in length and average 20 feet in thickness, with four to six feet of high grade material in the center. The stope fills in this mine should run around 20 ounces silver per ton, as the mined ore from the upper workings had to assay over 30 ounces silver per ton before the miners could afford to ship.

SEVEN-THIRTY VEIN

This vein system has produced over $2,000,000.00, and strikes approximately east-west and branches off from the Pelican-Bismark near the center portion of the Pelican-Bismark ore shoot.

This vein has been developed by a shaft approximately 900 feet deep. The lower levels from this shaft have not been projected into the ore shoot which is said to be approximately 700 feet in length. The Burleigh level is 290 feet below the bottom of the shaft. The Seven-Thirty vein has either been cut near the breast of the Burleigh level, or is within 200 feet of the present breast. A survey would determine this.

The average ore from the upper Seven-Thirty vein assayed 154 ounces silver per ton and 11.5% lead. It can be expected that the ore in this vein at the Burleigh level will be lower in grade but will not be known until the vein is developed.

DIVES, DUNKIRK & BAXTER VEINS

These veins are derived from a split in the Pelican-Bismark vein near the southeast end of the vein. These veins have also been worked through

numerous surface adit levels and have been cut by the Diamond and Ashby levels.

The ore shoot on the Baxter lode is approximately 500 feet in length and that of the Dives-Dunkirk 700 feet in length. Both shoots extend from the split in the Pelican-Bismark claim south-easterly.

The grade of ore from these veins is about the same as the other veins described. The veins are strong and should be worked through the Burleigh level.

CONCLUSIONS

This mining group comprises one of the largest properties in this district from the standpoint of past production, length of workings, size of veins, and ore shoots.

These mines have had no concerted effort placed upon them for almost 50 years. There has never been an efficient concentrating mill on the properties. Most of the 25 miles of old workings have caved; however, there is an excellent access adit in the Burleigh level, and the mines could all be worked from this level. Veins and mineralized fracture zones vary in width from four to 250 feet. The ore values on the lower levels will not be as high as were normal to the early day miner; however, with modern equipment and methods the values should be high enough to show a profit.

There is a good possibility that gold and copper values will increase as the veins are developed below the Burleigh level. This has been proven in nearby mines.

It is known that when the majority of the ore was produced from these mines, zinc was of no value and was left in the mines, and the broken ore sorted in the stopes by the early day miners. This should lend credulence to the supposition that the stope fills could be valuable as mill feed ore.

At least two neighboring mines on essentially the same vein systems have mined ore at a profit at least 500 feet deeper than any mined on the subject vein system. Therefore, the possibilities are very good that ore will be found on and below the Burleigh adit level.

It is the writers considered opinion, based upon Engineers old reports and discussions with engineers who were familiar with the properties during the operational period, that substantial tonnage of mill feed is contained above the Diamond level in the old stopes, composed of broken ore and ore left standing as minerals were in many cases too finely deseminated to sort and because

of the high percentages of zinc. The virgin ground between the Burleigh and Diamond levels under the main ore shoots, a vertical distance of 190 feet should produce a very substantial tonnage of mill ore.

With proper management and the expenditure of $100,000.00 for mine development, your company has a very good chance of developing considerable tonnage of profitable ore within the limits of the mining claims controlled by your company.

RECOMMENDATIONS

1. The Pelican-Bismark drifts on the Burleigh level should be rehabilitated and a new raise driven 190 feet to the Diamond level.

2. The Pelican-Bismark drifts on the Burleigh level should be continued to the northwest as well as to the southeast to attempt to develop ore at this horizon on the Wisconsin-Corry-City, Baxter and Dives veins as well as the Pelican-Bismark.

3. A survey should be made of the Seven-Thirty workings and the Burleigh adit to determine the location of the Seven-Thirty vein at the Burleigh level. Following this, the Seven-Thirty vein should be encountered and driven toward the west to get under the ore shoot known to have been in the upper workings.

4. The mill at the portal of the Burleigh adit should be used only as a pilot mill, and the mine should be developed with the though in mind that eventually a mill of at least 300 tons per day capacity should be built to handle the ore. At this point you should have a highly efficient and profitable operation.

5. The dumps and stope fills should be examined as work progresses and an attempt made to upgrade this material by screening or gravity. Should this prove feasible, a large tonnage of broken ore will be cheaply available for milling.

6. A comprehensive map should be made showing all veins, dykes, and workings so that additional favorable exploration ground may be located more easily.

Repsectfully submitted,

D. V. Watrous

D. V. Watrous 16 Oct. 1957
E.M. No. 1570

is not less than thirty feet. Associated with the higrade smelting ore, there has been, at times, a large quantity of material containing from 12 to 40 ounces of silver per pon, in addition to small values in gold and lead. The values of this materials, however, are so finely disseminated through the vein mater, that they cannot be profitably saved except by concentration. The old stopes in the mine are completely filled with ore of this latter class.

DEVELOPMENT:

The workings of this Bismark vein are fully and accurately shown on the drawing submitted herewith and marked B. Many of the levels, winzes, shafts and stopes have been named after the men, who, as lessors have made them and in this report this nomenclature will be followed. In describing this development work we will begin at the apex of the mountain and follow down through the various shafts, tunnels, drifts, winzes etc, until we reach the lowest workings.

The Bismark shaft was sunk at almost the apex of the hill to a depth of about 50 ft., where it connected with a drift on the vein from the west, designated as No. 1 level. To the west of this No. 1 level, and about 60 ft. below it, a short tunnel was driven to an intersection with the vein and a drift made on the vein about 200 ft. in length. This drift was designated as No. 3 level. From these three levels and the Bismark shaft quite a large quantity of high grade ore was extracted. This work, however, was all done prior to the time that the present owners acquired title to the property, and it is impossible to give any accurate figures as to the exact sum realized from the sale of these ores.

At a point on the independence claim, about 200 ft. below No. 3 level, another cross-cut tunnel has been driven to an intersection with the vein, and a drift driven 200 ft. on the vein to a connection to an upraise from one of the lower tunnels of the mine. This drift is designated as the Independence level.

On the eastern and opposite side of the mountain from the above mentioned tunnels, a tunnel has been driven westerly to an intersection with the vein. This is known as the El Mahdi level, has been driven 300 ft. westerly and about 100 ft. easterly on the vein.

About 25 ft. west of the end of the El Mahdi tunnel, in this level, connection is made with the top of the raise coming up from the Eroules tunnel level of this mine, known as the El Mahdi raise. In the El Mahdi raise, the third level extends about 25 ft. west and 135 ft. east, and the 2nd level extends about 70 ft. west and 400 ft. east of the raise.

The first level extends 400 ft. west, and 600 ft. east of the El Mahdi raise. The Hercules Tunnel Level, has been driven 1,400 ft. west and 650 ft. east from the El Mahdi raise. Between the Hercules tunnel level, and a level 275 ft. below it, the principal passage way may be known as the Berg ainze.

The 80 ft. level extends 450 ft. west and 170 ft. east. The 140 ft. level 250 ft. west and 440 ft. east. The 210 ft. level, 200 ft. east. The 75 ft. level, about 500 ft. west and 200 ft. east to the Berg Winz. The breast of the east drift on the 275 ft. level is at a point 180 ft. west of the breast of what is known as the Illinois Level. This Illinois Level, is a tunnel which starts from the surface and extends westerly 1,300 ft. to its breast. At a point 240 ft. west from the Berg Winz, connection is made with the top of the Zero raise, coming up from the Zero level of this mine.

The Catarello Level extends 100 ft. west and 330 ft. east of the Zero raise, and the Groees Level 100 ft. west and 1,030 ft. east from the raise.

The Zero level starts from the surface and extends westerly on the vein 3,200 ft.

The Bonomini Level begins at the Blanton raise and extends westerly 1,800 ft.

The Pellican, or No. 2 level connects with the surface by a cross cut tunnel known as the Pellican tunnel, 1,580 ft. in length. This level extends westerly on the vein from the end of the Pellican cross-cut tunnel, for a distance of 3,200 ft. the 50 ft. level begins at the Thompson shaft and extends westerly 570 ft. The 100 ft. level extends 640 ft. west and 170 ft. east of the Thompson shaft, and the 175 ft. level 750 ft. west and 150 ft. east from the same shaft.

The Diamond Tunnel level begins at the Diamond Tunnel through which the ore extracted from this level is transported to the surface and extends 3,100 ft. west. The Diamond tunnel is not the property of this company, but taps the lower workings of the mine at the extreme easterly end of the area covered by the holdings of this company. A fixed price per car is paid to the owners of the Diamond Tunnel for the privilege of using it for the purpose of getting out the ore. This arrangement has made it possible to work this mine to a depth of 300 ft. below the lowest surface opening belonging to this property, without the necessity of hoisting the ore.

Many of the workings shown on the map, and referred to above, are of no great importance at the present time, except that they serve to show the location and continuation of the vein, and I will now take and describe in detail such of the workings as are worthy of special note.

FIRST LEVEL

The stopes in this level produced well in high grade ore, and the broken rock on the timbers in the Parreti,

Ling and Bonney, and Gillen and Roberts stopes above this tunnel level is well mineralized. These stopes will average 6 to 8 ft. in width, though the vein is much wider and produced net in smelting ore $645.48; $29,658.79; and $60,601.17 respectively.

HERCULES TUNNEL LEVEL:

Access to this level is through the Hercules Tunnel, which is driven from the surface of the mountain in Brown Gulch to the Seven-Thirty vein, which it intersects at right angles just east of the top of the Seven-Thirty shaft; thence easterly about 900 ft. along a drift on the Seven-Thirty vein to a cross-cut north; thence northerly through this cross-cut 450 ft. to the Bismark vein at a point near the El Mahdi raise. This tunnel level in the Bismark vein is driven west 1,350 ft. and east 700 ft. from El Mahdi raise.

The ground stopes out above this level is shown in Map B. The ground stoped by four of the lessors on this level was selected for the purpose of showing the value of the ground worked. The stopes so selected are marked on Maps B, D. Desteffane, Smith & So. Barney O'Connel and F. Nelson. These stops produced net, $11,238.88; $20,469.65; $107,583.77; and $37,636.62 respectively.

The vein in this level is shown, by development work to be from 10 ft. to 50 ft. wide and while this ground is shown by the map to be all stoped out east of the El Mahdi raise, there is still such valuable smelting ore embraced within this area, for the stopes shown on the map do not include the entire width of the vein. They were worked merely on a single streak of smelting ore, while the vein frequently carries as many as three such streaks in its immense width.

Near the east of the O'Connel Stope, N.C. Anderson, a lessee, has drifted south and upraised 25 ft., and then drifted west on a vein of entirely different character from the Bismark vein. At a point several feet west of his upraise he has sunk a winz in this new vein. A sample of this ore from an exposed face in the west side of the winz, eight to ten inches wide, and 15 ft. high, assayed 307 ounces of silver per ton and 27% lead. I believe that this vein is the Seven-Thirty vein as it should make a junction with the Bismark vein at about this location. If it be true that this is the Seven-Thirty Vein, the presence of this higrade of ore in it at this point would indicate that there is much unworked ground of great value in this vein, between this point and where it has been worked to any great extent.

Going west from the west end of the De Steffano Stope in this drift no mining at all worth mentioning has been done. This vein is shown to be good and strong all the way, with little smelting ore showing. I am of the opinion however, that the vein above the drift will be proven to contain smelting ore when it is explored by sufficient upraises, and drifts, for such is the unfirom history of the vein.

80 ft. Level:

Very nearly all of the ground above this drift, as far as opened up has been stoped out. The returns from Peterson and John O'Neal, Larsen & Johnson and Berg & Hartman stopes on this level, have been secured. These stopes produced $20,824.27; $13,141.20; $4,448.87; and $24,898.66 respectively. The width of these stopes will average 6 ft. to 8 ft. The material on the stull shows to be very well mineralized.

At the east end of this drift there is a stope being put up from this level by James Griffin which will be taken up and described under the heading of the next level below, for the reason that it starts from that level. There is an excellent showing of high grade ore in the bottom of this drift over the solid ground west of the Berg winz.

140 ft. Level:

The ground above this level is now being stoped. At the west end of the drift Chas. Rydland is stoping out a block of ground which has produced, to the date of this examination, $6,727.93. The present showing of ore in the top of the stope is excellent. The ore is being sorted into two classes. A sample from the breast assayed 830 ounces of silver per ton and 21% lead; the material which is being left on the stulls, shows upon examination to be well mineralized.

East of the Ridland Stopes, a stope is being put up by Oscar Wing, which has produced $57,221.00. The ground yet remaining in this bloc, below the 80 ft. level, should produce at least $30,000.00 more. The showing of ore on the top of this stope is very fine. This stope is 12 to 15 ft. wide, all quartz, and the quartz all minera-eralized. The smelting ore is in streaks 10 to 20 inches in thickness. The Berg winz paid $100 per ft. for sinking through this block of ground.

The ore which is now on the stulls in this stope is a splendid concentrating ore.

East of the Wing lease, a block of ground 250 ft. long between this level and the Hercules tunnel level, is leased to James Griffin, who has put up a stope 50 ft. long to a point some distance above the 80 ft. level. The stope is in the same kind of ore as that showing in the top of the Wing stopes. This stope has produced $27,009.43 and will produce about $30,000.00 by the time it reaches the Hercules Tunnel Level. The remaining 200 ft. of Griffin ground should produce at the same rate and will therefore yield $120,000.00.

210 ft. Level:

There are but two stopes from which ore has been taken from this level. The John Peterson stope, which

has been put through to the next level above, produced $22,228.64. The A. Barmetler Stope, which is now being worked shows to be from 10 to 30 ft. wide, all in ore and has produced $15,789.50. The ground east of this stope has not been explored at all, but should be good.

275 ft. Level:

Three stopes have been worked on this level. Frank Winters, Rudolph Barth and Barth & Cole, which have produced $28,224.38; $30,224.88 and $14,685.95 respectively. The first two stopes have been entirely worked out while the Barth & Cole stope is now being worked. This stope is being broken 8 to 10 ft. wide. The entire top of the stope shows to be well mineralized, with many large streaks of solid smelting ore. The material which is being left on the stulls, shows a great deal of mineral. The ground east of the Barth & Cole stope is completely blocked and should produce as well as the stope which has produced smelting ore at the rate of $5.25 per square ft. of the vein worked. It will be observed that this block of ground above this level lying west of the Berg winz, and the Frank Winters stope has been blocked out by workings on all sides.

CATERELLO LEVEL:

Three stopes have been started on this level: John Corcoran, D. Caterello and Oleson & Jones, which have produced to date $2,985.19; $28,818.76; and $14,999.18 respectively. John Corcoran has just gotten fairly started on his block of ground and is even now making better than $10.00 per day for each man working. This broken material now on the stulls in the Caterello and Olson & Jones stopes is an especially good grade of concentrating ore. There is a very fine showing of both smelting and concentrating ore in the breast of the east end of this drift.

GROSSO LEVEL:

The first 200 ft. east of the Zero Raise is now under lease to Angelo Luino and is being stoped out. This lease has produced $22,921.31 to date. The broken material on the stulls in this stope shows to be very liberally mineralized and is a good grade of milling ore. The back of the drift east of the Luino stope shows more oreless ore. This ground for several hundred feet appears to be good from a prospecting point of view, the width of the vein on this level, as shown by numerous cross-cuts is at least 50 ft., though none of the stopes include the entire width.

ZERO LEVEL:

There are four stopes on this level from which ore has been extracted and another stope has just been begun. The three stopes worked by Jim Paglsotti, John Franchini and Bartolomeo & Williams have produced $3,732.11; $29,885.55; and $16,651.50 respectively. The stope at the eastern end of the ground on this level worked out by John Franchini produced $18,865.87.

The solid ground lying between this last mentioned Franchini stope and that now being worked by Bartolomeo & Williams should be very productive territory. John Franchini is now putting in the first two raises in the first 100 ft. of ground west of the Zero raise. I took a sample from the top of the second raise west of the Zero raise which assayed 50 ounces of silver per ton. All of the material exposed in the top of this raise appears to be thoroughly mineralized in such manner that it will be impossible to save any considerable quantity of smelting ore out of it, and yet it will be most excellent milling ore. As the work of opening up this block of ground proceeds, there will be no doubt that some high grade streaks of ore will be shipped directly to the smelter. The stoping of ore in the top of the Paglisotti stope is very good. I took samples of ore from the streak, on which the work in these past mentioned stopes is being done, one at a point 200 ft. west of the Zero raise, and the other at about 400 ft. west of the same point. The first sample assayed 83 ounces of Silver per ton and six and seven per cent lead.

The showing of ore on this level west of the Zero raise appears to me to be one of the encouraging signs found in the mine, indicating great prospective value. The fact that ore is found so far west on this level and that there is 600 ft. of virgin ground above it, puts in view a very large block of ground from which great production may be expected. In fact the presence of valuable bodies within this block of ground would seem to be proven almost beyond a reasonable doubt. This ground is not included, however, in the estimated ore in sight.

The width of the vein on this level is from 50 to 75 ft. and there are probably several streaks of smelting ore enclosed within the vein, as has been the case in many other portions of the mine. The level is opened to the surface, and the ore mined above this level is taken out through it, where there are suitable and ample dumping facilities for waste rock and buildings for the handling of the ore.

EAGLE BIRD NO. 1 LEVEL:

This level is now 105 ft. west of the Vigna raise. The last 30 or 40 ft. of this drift shows good smelting ore. A shipment of 9,860 lbs. of ore just made from this drift produced net, $392.52 which is at the rate of $79.62 per ton. The presence of ore in this drift so far west is another encouraging disclosure, going to prove the vein continues to bear ore in its westward strike. Indeed, as I have already pointed out, this vein carries ore with such uniform regularity that the opening up of new bodies of ore by new development work, and always be relied upon with as high a degree of assurance as characterizes the operations of any form of business.

Just West of the Vigna raise, Pete Vigna is putting in a stope which has produced $33,850.21 a production of

$4.23 per square foot of vein worked out. The material on the stulls in this stope is a good grade of milling ore. Going east from the Vigna stope there is 500 ft. of solid ground practically blocked out, for as shown on the map, the ground below was stoped out up to this level, and good ore is being taken out of the level above immediately over this block of ground. In estimating the ore in sight, however, I have excluded this block, though it might properly be included in the estimate.

We then find 450 ft. of ground which has been stoped. Three parallel drifts were run through this block of ground and a stope was put up over each of these drifts. The aggregate width of these stopes is not less than 30 ft. The last 100 ft. of this block of ground stoped by T. Molley produced $29,966.51.

The block of ground extending from below the Molley stope, 500 ft. west to the next winz should be just as good as this stope, and perhaps somewhat better, for the ground immediately below has all been stoped out and was one of the most productive pieces of ground ever worked in the mine, and the ore continued in this stope strong and full up to this level. Moreover, we know that the values continue elsewhere in the vein to the distance of 1,000 ft. above this level. I have not, however, counted this ore as actually in sight.

BENOMI LEVEL:

Two stopes, 100 ft. in length each, have been started just east of the Vigna raise. We then find 50 ft. of solid ground into which Oscar Freisell has just started to stope. The next 100 ft. of ground was stoped through to the next level above by Oscar Freisell and produced $47,267.84, which is at the rate of $3,634 per square ft. of the vein stoped. From this Freisell stope east to the Blanton raise, a distance of about 1,200 ft. three streaks of ore were drifted on and stoped out. The aggregate width of these stopes is not less than 35 ft. and they are now full of fine grade milling ore. East of the Blanton raise the ground has not been prospected on this level.

PELLICAN or 2 1/2 LEVEL:

The western end of this level is off the vein entirely and there is no showing of ore in the vein west of the Toffolo stope, although I am of the opinion that ore will be found further west. The Toffolo stope produced $6,410.55. This production while not yet satisfactory or profitable, still proves conclusively that there is ore in the vein as far as this point. The ground above this stope to the Hercules Tunnel level, about 900 ft. has not been prospected at all.

The block of ground above this level, east and west end of Bonomini level and west of the east end of the ground which is shown as stoped out, should be very productive territory, for ore has been extracted from various points adjoining it, as shown on the map, and the ore bodies worked in these stopes continue into this block of ground. The Belviaqua stope, adjoining this ground on the east, 100 x 100 ft. on the vein produced $27, 750.22 which is at the rate of $2.77 per square ft. on the vein stoped. This block of ground is about 1,100 ft. long, and should it produce at the same rate as the Belviaqua stope, it would bring $305,232.42 net. I would not be understood as definitely placing such a value on this block, for I have not included it in the estimate of the ore in sight but there is no reason why it should not produce the value named, and all the evidence there is, points to the conclusion that it will do so.

THE 50-100-175 and 235 ft. LEVELS:

The ground on all these levels has been stoped out, as shown on the map, and was most productive territory. As an example of the production from this ground a stope taken by J. Thompson, on the 175 ft. level was selected. An examination of the records disclosed that this stope produced $75,502.19, at the rate of $4.83 per square foot of the vein stoped.

DIAMOND TUNNEL LEVEL:

This level is connected with the Diamond tunnel level, which is the property of the Corry City Gold & Silver Mining Co., through which the ore mined between this and the Pellican, or 2-1/2 level, is transported to the surface. A fee of 35¢ per car, or one and a half to two tons, is paid for the privilege of tramming through the Diamond Tunnel. This charge amounts to 25¢ per ton of ore trammed. The block of ground about 800 ft. in length, located on both sides of the Thompson shaft, and between this level and the 2-1/2 level, has all been stoped out. The streaks of smelting ore, one on each wall of the vein, were drifted on and stoped out. The broken material now on the stulls in these stopes, as well as the ore left standing in these stopes is a good grade of milling ore.

At a point about 180 ft. west of the Pardue shaft, on this level, in the bottom of the drift, there is showing a body of solid smelting ore about 30 to 40 ft. long and fully two feet thick. A general sample taken from this body of ore assayed 39 and 5/10 ounces of silver per ton, 59 and 5/10% lead and 11% zinc. This ore is very desirable on account of the high percentage of lead which it contains. There is probably a large body of this kind of ore lying below this level. There is no way of definitely determining the extent of this ore body, except by actual development work, which could not be accomplished in time to serve the purpose of this examination. The indications are, however, that there is a considerable body of this ore, and this conclusion is strengthened by the consideration that it was from the territory almost immediately above this body of ore that the immense production of early days was made from the Dives and the Pellican mines.

A large body of ore shown on No. 7 level, west of the pardue shaft, above the Diamond Tunnel Level, which

will be valuable as a Zinc product. A sample of this ore assayed 22 ounces of silver per ton. 17.5% lead and 25% Zinc.

It is manifest from the showing in this vicinity in the mine, that there is a large quantity of concentrating ore here which will produce many thousands of dollars when proper facilities for handling it are produced, for it was from this portion of the vein tht the extremely high grade ore was extracted which made the Dives and Pellican mines famous in the earlier stages of their development, when no ore, except that of very high grade was handled. While this concentrating ore can be gotten out by the simple process of pulling down old timbers and allowing it to fall into the levels where it can be loaded into cars and transported to the mill, yet the stopes are in such condition that they cannot be penetrated for the purpose of measuring up and sampling the ore in them, and I have accordingly not included this ore in the general estimate of the concentrating ore on the timbers in the old stopes.

I have tabulated the results of the shipments of ore from the 35 stopes mentioned above, and the following table gives the quantity of ore shipped from these stopes, the total value and the value per ton. The amounts under net value are the net amounts received from the sampling works after deducting for wagon haul, sampling, freight and smelting charges have been make, but with no reduction made for actual costs of mining.

Name Of Lessee	Sq. Ft. in stope	Tons Mined	Net Value	Value Per Ton	Location
Geo. Perretti	7,500	44.66	$ 4,645.48	$104.02)	
Ling & Benny	7,500	322.80	29,658.79	91.88)	1st level
Gileen & Roberts	22,500	380.57	60,601.17	159.32)	
D. Desteffano	6,000	113.57	11,238.88	99.40)	
Smith & Co.	7,500	250.34	20,469.65	81.77)	Hercules
Barney & O'Connell	8,000	1447.06	107,883.77	74.35)	Level
F. Nelson	7,500	366.12	37,636.62	102.79)	
Peterson & Kones	12,000	244.24	20,825.27	82.26)	
John O'Neal	9,750	171.22	13,141.20	76.44)	80 ft.
Larson & Jonson	2,500	49.40	4,448.87	90.04)	Level
Berg & Hartman	7,500	256.76	24,895.66	96.94)	
Jas. Griffin	6,000	470.09	27,009.43	57.46)	140 ft.
Chas. Ridlund	6,000	113.05	6,727.95	59.51)	Level
Oscar Wing	8,000	888.67	57,221.00	64.43)	
John Peterson	6,500	331.71	22,228.24	67.01)	210 ft.
A. Barttalar	4,000	593.55	15,789.50	66.50)	Level
Frank Winters	8,000	253.50	25,895.38	102.12)	
Rudolph Barth	6,500	297.80	30,224.88	101.49)	275 ft.
Barth & Cole	2,800	229.04	14,565.95	63.99)	Level
John Corcoran	800	30.00	2,985.19	99.30)	
J. Catarello	5,000	240.47	28,616.76	119.00)	
Olson & Jones	2,000	123.78	14,099.18	113.91)	
Angelo Luino	14,000	207.63	22,92;.31	110.39)	Zero
Jim Paglisotto	2,100	57.41	3,752.11	65.34)	Level
John Franchini	9,000	345.11	29,885.65	86.60)	
Bartolomeo & Williams	13,000	174.35	16,651.50	95.51)	
John Franchini	10,000	195.71	18,865.87	96.40)	
Pete Vigna	8,000	441.95	35,860.21	76.61)	
Oscar Freisell	13,000	298.17	29,966.51	100.50)	
Oscar Freisell	13,000	478.75	47,267.84	89.14)	
B. Toffolo	10,000	118.71	6,410.55	54.00)	Pelican
Paul Hevliequa	10,000	292.43	27,750.22	94.90)	Level
J. Thompson	15,000	972.80	72,502.19	74.53)	
Totals	282,950	10,799.52	890,481.18	82.46	

The aggregate area of the vein stoped, in the stopes covered by the above table is: 282,950 square feet. The production was one ton of ore for every 26.20 square ft. of orevein stoped. Production per square foot, $3.14.

Past production:

There is no way of ascertaining the exact production of the Bismark vein. It is variously estimated from $8,000,000, to $15,000,000 of production. I have myself, satisfactorily accounted for some $5,000,000 to $6,000,000 of production. A search of the records of the mine shows that the property has, since Jan. 1, 1892,

produced almost two and one half million dollars. The following table gives the production since that date:

YEAR	TONS	PER TON AVERAGE VALUE	NET VALUE
1892	721.50	79.65	57,451.78
1893	1,480.10	106.10	157,998.47
1894	2,384.40	74.33	187,346.48
1895	3,795.00	67.61	256,615.24
1896	4,648.02	70.58	303,081.50
1897	3,274.41	74.10	347,762.52
1898	3,179.68	83.84	266,600.47
1899	2,637.28	90.92	241,728.30
1900	2,898.42	92.82	269.040.76
1901	2,644.58	90.70	228,887.00
1902	2,389.01	55.00	120,368.47
TOTALS	30,117.40	77.92	2,346,799.79

The values given in the above table are the values net above transportation and smelting charges but with no deduction made for cost of mining. After having made deductions for the cost of mining, the actual net profit to owners and lessees has been above 75% of the net value as shown in the table.

FUTURE PRODUCTION BISMARK VEIN: I will discuss the future production of the Bismark vein under the heads: (A) Ore now in sight, (B) Probable ore, and (C) Prospective ore.

ORE IN SIGHT:

Ore in sight is ore proven by actual workings on three oremore sides in such a manner that the quantity of it can be accurately determined by actual tests. The ore thus in sight in the Bismark vein is of 3 classes: (1) Smelting ore, (2) Concentrating ore now in the old stopes, (3) Concentrating ore associated with the smelting ore.

SMELTING ORE IN SIGHT:

The smelting ore occurs in well defined streaks, varying from a few inches up to several feet in thickness. While it frequently happens that at any one point in the vein there is but a single streak of smelting ore, yet such ore also frequently occurs in several parallel streaks. The space between these streaks is filled with lower grade concentrating material.

The condition in this mine are such that the amount of ore in sight can be calculated with a certainty very unusual and practically exluding all doubt. The quantity can be measured with great accuracy and the quality can be determined by tests of the most rigid and exacting character. The usual method of estimating the quality of ore in sight, is by taking a great many samples of ore and assaying these samples. If sufficient samples are taken, this can be made a very accurate method of estimating ore bodies. But, it is manifest that the surest test of the value of ore is by actual sales of the ore in carload lots and the settlement thereafter by smelter.

It will be noticed by inspecting the map B that previous work in the mine has resulted in practically surrounding the ore now in sight with stopes which have been produced from them. By calculating upon the basis of this territory, which has been thus worked out, the element of doubt as to the value of the ore is very largely eliminated, and we can estimate with great accuracy the value of the ore yet remaining.

In making this estimate, I have selected as a basis of calculating, the 33 stopes shown in the table on pages 11 and 12, as will be seen by reference to this table, the aggregate area in the stopes mentioned therein is 283,950 square feet. The production made was one ton of ore for every 28.20 square feet of vein stoped and the production per square foot was $3.14.

The area of the vein in which ore is blocked out and in sight and so indicated in Map B is 387,600 square feet, using as the basis of calculation a net production of $3.14 per square foot, this ground will produce $1,217,064 net above hauling, transportation and smelting charges, if mined under the leasing system, the royalty received by the owner of the mine would be 30% or $608,532.00. After deducting the expenses incident to keeping up the mine, the profit to the owners would be not less than $500,000.00. The total profit to owners and lessees would be about 75% of the full amount, or $912,788.00.

The same results, making allowance for fractional values discarded in calculation, are obviously reached if the estimates are based on the number of tons in sight and the value per ton. For figuring the tonnage of smelting ore contained in the blocks of ore in sight, in accordance with the actual production of the surrounding stopes, there would be 14,794 tons in sight. The average value of the ore which has been extracted from the surrounding stopes is $82.46 per ton. The smelting ore now standing in the mine is the same character as that which has been extracted, and while the price of silver has declined somewhat in recent years, yet the stopes selected as the basis of the calculation were all made since 1896, and therefore since the freak drop in the price of silver. And while these ores carry a large quantity of silver, they also contain values in Gold and substantial values in lead. Moreover, while silver has declined in value, so also have the expenses of mining

and the costs of transportation and smelting decreased with the decline of silver. The result is, that the smelting ore now in sight will yield practically the same net return per ton as that extracted from the stopes selected as the basis of calculation. Accordingly, the 14,794 tons in sight, at the average value of $82.46 per ton, will yield $1,219,913.24 net above transportation and smelting charges, which allowing for discarded fractional values agrees with the results reached above on the basis of production per square foot.

CONCENTRATING ORE IN STOPES: (1,184,000 tons)

Large quantities of concentrating ores, as has been explained occur in the vein between streaks of smelting ore, and closely associated with it. By reason of this close association, it is necessary in extracting a given amount of smeltering ore, to shoot down many times that amount of this concentrating ore. The bulk of that which is thus shot down is left on the timber in the stopes. It is not necessary, however, in order to extract the smelting ore to shoot down the entire associated filling of concentrating ore, and a considerable amount of it is left standing in the vein. By actual measurement made by me, the stopes in this mine now contain 18,842,000 cubic feet of this concentrating ore. It requires sixteen cubic feet of this ore to weigh a ton. So that, calculated on this basis, the contents of these stopes is 1,184,000. In making the measurements upon which this estimate is based, only those stopes were considered whose dimensions could be definitely ascertained. The great stopes from which the early production of the property was made, as mentioned on page 11 of this report, were not considered, because not accessable for examination and measurement. Accordingly, I can confidently assert that the estimate of 1,184,000 tons is undoubtedly below the fact. It was thought best to sample this ore body by taking out carload lots that would represent the absolute minimum in value of the ore. The average value of these five car lots of ore, constituting over 100 tons was $66.50 per ton. This ore is a good concentrating ore. That is, a large proportion of the values contained in it can be saved by straight concentration, which is the most economical method of handling ores. In order to ascertain what proportion of the values can be saved by concentration, an average sample of the ore was subjected to the most careful test, under my direction, with the result that it was demonstrated that at least 80% of the values contained in the ore can be saved.

The items of expense per ton connected with the handling of this ore would be as follows:

Extracting from stopes and transporting to mill	$1.00
Cost of milling and handling the concentration	1.50
Total	$2.50

This estimate of expense, in view of universal experience in concentrating ores, is a most liberal one. A saving of 80% would give a recovery of $5.20; the cost of extracting the ore from the mine and milling, it leaves a net profit of $2.70 per ton. A profit of $2.70 per ton on 1,184,000 tons, aggregates a total profit of $3,196,800.

CONCENTRATING ORE ASSOCIATED WITH SMELTING ORE:

When the smelting ore now in sight is removed, it will result in the production of 200,000 tons of concentrating ore, similar to that already discussed, which will give a profit of $540,000.

RECAPITULATION OF PROFITS FROM ORE IN SIGHT, IN BISMARK VEIN:

Smelting ore	$ 912,798
Concentrating ore in stopes	3,196,800
Concentrating ore with smelting ore	540,000
Total	$ 4,649,588

PROBABLE ORE:

In this case I have included ore proven by workings on, not exceeding two sides, where the preponderance of evidence goes to establish the actual existence of the ore. Map B, shows the ground counted as "probable ore". In the absence of facilities for more complete sampling than now afforded, I should not like to venture an estimate as to the value contained in this territory, further than to say that a great production will undoubtedly be made from it. If it should produce at the rate of the stopes herein before tabulated, it would yield $6,481,960,000 in smelting ore alone. It may produce less than that amount; it may produce more, but no estimate can be made until much further development work has been accomplished.

PROSPECTIVE ORE:

Prospective ore, includes all those portions of the vein not yet prospected by workings of any kind, or not yet exploited by workings sufficient to enable any definite prediction to be made concerning them. While it is obvious that no actual figures can be even suggested with reference to the possible output of those portions of the vein, yet as has already been pointed out, the veins in this locality carry ore with such regularity and persistency that the occurrence of ore bodies, as territory is exploited, can be relied upon with a very high degree of assurance. And this presumption of ore is especially strong in the case of the Bismark vein, which has been proven by such extensive workings to be so completely and so uniformly mineralized. When we consider the character of the district in which the Bismark is located, the thorough exploitation of the vein itself, and the immense portion of the vein still unworked, it can be asserted with confidence, that this vein will continue to be profitably worked for generations to come.

SEVEN-THIRTY VEIN:

DESCRIPTION:

This vein is a fissure in the granite of a proven horizontal length, underground, of 3,100 ft. and a depth of 1,300 ft. varying in width from one to 10 ft. There are occuring continually slight undulations or changes in the course of the vein, without permanently affecting its general east-west course or strike. In many places the vein pinches, or closes, but very quickly opens out again. At all times the hanging wall is well defined and easily followed. The dip of this vein is 80 degrees south from the horizontal. It is, without doubt a primary fissure with a strike parallel to the axis of the upheaval of Sherman Mountain, on the south slope of which it occurs. Veins parallel to the line of upheaval have in general been found the most continuous in length and depth, also mose reliable ore producers.

The ore occurs in the Seven-Thirty vein in the form of Zinc blende and Galena, containing sulphide of silver, native silver, polybasite, and tetrahedrite, or gray copper, etc., as well as constant content of about one-tenth of an ounce of gold per ton. The ore occurs in this vein, as it does in the Bismark vein in two ways:

(A) As solid seams or streaks, cary in lead, zinc, polybasite and tetrahedrite varying in width from one inch to three feet.

(B) As a concentrating ore, made up of vein matter, through which are scattered small streaks and spots of galena, zinc, and native silver.

The object of all mining in this vein prior to 1896, at which time it passed into the hands of the present owners, was the extraction of ore of the class first mentioned above. This class of ore contained from 100 to 10,000 ounces of silver per ton and from 10 to 14 percent leaf. The average run of this class of ore shipped to the smelters during the 9 years, January 1, 1887 to January 1, 1896, was 154 ounces of silver per ton and 11-1/2% lead. Some of the ore in this vein contains a large percentage of light yellow or brown zinc blend which appears to exercise an excellent influence upon the amount of silver contained in the ore. Where this zinc blend is more in evidence there, also, does the silver run highest.

Occurring as an ever constant factor is the ore of the second class mentioned. There is now broken and on the timbers in the old stopes in the mine, thousands of tons of this ore, carrying from 10 to 40 ounces of silver per ton. This ore would unquestionably yield a handsome profit if removed in an economical way and handled by concentration, with being subjected to prohibitive charges for wagon haul and railroad freights.

DEVELOPMENT:

The Seven-Thirty is developed by a shaft on Hercules Tunnel lever 975 ft. deep and Hercules shaft from surface down to Hercules tunnel level 200 ft. and drifts run out from these plus the Hercules crosscut to the Bismark for an aggregate of nearly 5 miles of workings.

PAST PRODUCTION:

As stated above, the total production of this vein prior to 1896, was derived from the mining of higrade smelting ore, while the low grade concentrating ore has been allowed to accumulate on the timbers in the old stopes and in the cumps at the mouth of the Hercules Tunnel. The total production of this mine up to the time work was stopped in it by the present owners in 1896, to await the completion of the Burleigh Tunnel, has been about $1,800,000. Mr. H. M. Griffin, the former owner of this property left Georgetown in 1896, with close to $1,000,000 in cash, the production of this vein.

The history of the production of this vein in the past can only be determined by an examination of the ore books, in which under the names of the lessees, who worked the various blocks of ground. The shipments have been recorded as they were made from the different leases. The names of some of these lessees are shown on Map C. The map, however, does not show the precise block of ground worked under the lease referred to, for in most cases, the continuous ground was being worked at the same time, by different lessees and it is impossible, at this time to secure the names of many of the lessees in connection with the exact location of the leases, as no accurate stope map was kept while the work was in progress. The record of the production from twenty four of the leases in the mine has been obtained by careful searching of the ore books, page by page, and day by day. The totals derived from this search are 88,205 square feet of stope producing $463,997.13 or $5.26 per square foot of vein stoped. This shows even a better rate of production than that from the 33 stopes, on which returns were compiled in the Bismark Vein.

The following table shows the production of the Seven-Thirty vein from January 1, 1887 to January 1, 1896, a period of 9 years.

Year	Ore-Tons	Silver Oz.	Lead Tons	Silver Ave. Oz.	Lead %	Value
1887	763.46	105,717.00	72.44	138	9.6	$ 83,642.91
1888	891.39	134,718.47	85.43	151	9.5	103,277.56
1889	711.87	106,197.08	180.40	141	13.9	81,614.39
1890	303.81	185,047.89	98.00	149	13.0	165,554.66
1891	1,849.76	304,930.40	183.19	164	10.0	283,659.42
1892	1,168.45	111,806.63	31.25	95	11.0	74,218.25
1893	341.70	72,962.84	49.07	214	14.0	46,788.67
1894	485.65	92,337.95	71.37	190	14.0	41,902.75
1895	560.48	120,654.26	71.27	215	13.0	68,420.82
Total	8,076.57	1,243,801.78	942.42	154	11.5	$914,079.43

This table shows an average production of $113.17 per ton for nine years. Careful observation of this table of production brings out two things very prominently: one being the very irregular annual output from the mine; the other the quite marked decrease of the production in 1892, and the years following. There are good and sufficient reasons for this falling off.

The mine has always been working on the leasing system. No dead work by way of development was ever done by the management of the mine, and unless such work was done by the lessees, it was not done at all. So that when the fearful panic of 1892-1893 struck the state with its blighting effect on all forms of business, the mine was in no condition to continue a large output, for the management would neither itself do the work necessary to open up new ore bodies nor aid the lessees in such work, and it was impossible in the demoralized conditions of all business to secure lessees willing to do such work at their own costs. The logical result of this policy is shown by the figures for the 1892 -1895. The panic was at its worst in 1893, and the production of the mine was the smallest. As business conditions gradually became better, the production steadily increased. As a result of a more generous policy, the management of the Dives-Pellican retained the larger proportion of their lessees and produced in 1893-1894 and 1895, $157,990.47; $195,903.76; and $247,247.62 respectively. There was no difference in the conditions existing at the two mines except along a difference in the general policy of the management.

The total production of the Seven-Thirty vein, prior to the time when work was abandoned upon it, sometime during the year 1896, as gathered from the ore books, and other reliable sources, is approximately as follows:

Prior to 1879	$ 151,617.00
From 1879 to 1887	743,024.54
From 1887 to 1896	914,070.43
During 1896, estimated	60,000.00
Total	$ 1,868,729.97

FUTURE PRODUCTION:

The Seven-Thirty mine is now under water to the height of the 275 ft. level. The workings now under water have produced large quantities of high grade ore, and will unquestionably, as soon as the water is removed be in position to resume this production. The levels above the 275 ft. level were examined, and as these levels constitute a very large proportion of the mine, our estimate is based very largely upon actual observation. As it was not possible to make as thorough an examination of the ore reserves in this vein as was made in the Bismark vein, I cannot make an estimate on the future production from this vein with much certainty as I would like, but based upon the best obtainable data, I feel assured that the following estimate is well within the facts.

The future production from this vein, as in the case of the Bismark vein, will be derived from three sources, Viz, skeltering ores, concentrating ores, now on the timbers and concentrating ore associated with the smelting ore which will become available as the smelting ore is removed.

SMELTING ORE:

There is now exposed in the drifts on the various levels of this mine about 5,000 square ft. of vein which should produce at the rate of at least $3.00 per square ft., and thus yield approximately $150,000.00 net.

CONCENTRATING ORE IN STOPES:

The old stopes in this mine contain approximately two hundred thousand tons, figuring only on the stopes which can actually be examined at this time, having a gross value of at least $6.50 per ton. It has been demonstrated beyond doubt that we can save, by concentration, eighty percent of the value contained in the ore, giving a gross value saved of $5.20. Deducting from this gross saving the cost of mining, $2.50, we have a net saving of $2.70 per ton as in the case of the Bismark ore. The profit accruing from this source would be $540,000.00.

CONCENTRATING ORE ASSOCIATED WITH SMELTING ORE:

When the smelting ore now exposed in the mine is taken out, there should be produced about fifty thousand tons of concentrating ore, which would produce a profit of $135,000.00

RECAPITULATION OF PROFITS FROM "ORE IN SIGHT" IN SEVEN-THIRTY MINE:

Smelting Ore	$	$ 150,000.00
Concentrating Ore in Stopes		540,000.00
Concentrating ore with Smelting ore		135,000.00
Total		$ 825,000.00

In my opinion, the possibilities for the future production from this vein exceed by far, this estimate. Past experience has shown the vein to be a very uniform producer of high grade smelting ore, both east and west of the shaft and, there is every reason to believe that the future will repeat the record of the past. That heavy ore bodies exist, especially east of the shaft toward the Bismark vein, in the lower levels of the mine, I have no doubt. These will be exposed by the extension of the drifts on these levels after the Burleigh Tunnel has been driven under the Seven-Thirty shaft, and the water drained out.

My remarks in regard to the prospective value of the Bismark vein apply with equal force to the Seven-Thirty.

NEW NORTH VEIN OF THE BISMARK:

DESCRIPTION:

At a point about 150 ft. west of the El Mahdi Raise, on the Hercules Tunnel level, in the Bismark vein, a cross-cut known as the Kinney Cross-Cut, has been driven north 344 ft. to an intersection with a vein possessing all the essential characteristics of the Bismark vein. It has the same general trend as the Bismark. The ore found in it is identical with the Bismark ores in formation and character. The vein is of a porphyritic nature. It is probably of the same geological period and was probably formed at the same time as the Bismark Vein.

DEVELOPMENT:

There is no development on this vein except a drift west of the Kenny cross-cut 150 and east about 250 ft. This drift east has not yet disclosed any considerable amount of ore, although it shows finely disseminated streaks of higrade smelting ore. Forty seven feet west of the Kenney cross-cut an up-raise is now being put up by a lessee. At the time of my examination, the upraise was 15 ft. above the back of the level. In the top of this upraise there is a streak of smelting ore, showing from two to five inches in thickness, with the usual accompaniment of concentrating ore. The smelting ore from this upraise is being saved and one shipment of 4,260 lbs. made during May of the present year, assayed 251 ozs. Silver per ton, 14% lead and 16% Zinc, netting $2,692.50, a value per ton of $126.40.

PAST PRODUCTION:

No mining has been done in this vein and no ore has been taken out, except that extracted in prosecuting the development work as above mentioned.

FUTURE PRODUCTION:

This is an entirely new vein, opened up at no other point in these mines. Since the vein shows to be very strong and has all the essential characteristics of the Bismark vein, there is no reason to believe that it will not be a great producer of both smelting and concentrating ore, just as the Bismark has been and is now. The vein has been discovered at depth of 800 ft. or 900 ft. It seems to be a typical fissure, which will extend to the surface as well as indefinitely downward. The prospective value of this ore is not susceptible of accurate calculation, owing to the absence of sufficient data, but it will be a profitable producer, this is not susceptible of serious question.

PHILLIPS VEIN:

DESCRIPTION:

At a point 2,100 ft. from the mouth of the Burleigh Tunnel, this vein intersects the tunnel. It is a large strong fissure in the granite, standing almost perpendicular with the same general course, east-west, as the Seven-Thirty vein. The ore found thus far in this vein runs high in galena and zinc blend. The indications are that this vein will produce lead ore of a very high grade, carrying more or less silver, and perhaps some gold. What has been said in regard to the Seven-Thirty vein being parallel to the axis of the upheavel applies also to this vein.

DEVELOPMENT:

This vein is developed by a drift west from the Burleigh tunnel 1,100 ft. and east about 300 ft. The drift west has been stoped for the purpose of driving a cross-cut north to the Seven-Thirty vein. The east drift is

being driven ahead on a good strong vein, with every indication pointing to the discovery of good ore within a short distance. There is no other opening on this vein, except on this level.

PAST PRODUCTION:

There has been practically no effort made to mine any of the ore exposed in this vein, owing to the fact that it would interfere very materially with the progress of the drift and the cross-cut where rapidity of work is now the all important thing, as the completion of them means so much to these mines in the way of drainage, ventilation and transportation. (Drift and cross-cut to the Seven-Thirty Shaft).

During the progress of driving this drift the ore passed through has been saved in a somewhat different manner. These shipments have produced net $3,560.19. The ore has contained about 40 oz. silver, 5/100 of an oz. in gold per ton and 50 to 60% lead. The value of this ore at present rates of settlement would be from $60.00 to $65.00 a ton.

FUTURE PRODUCTION:

The development work done on this vein is not sufficient to permit of any estimate of "ore in sight" being made. However, located as it is in the midst of the Dunderberg, Terrible, Mendota and other great mines, which have produced several millions of dollars, it possesses a prospective value far beyond what actually appears to one making an examination of the vein as exposed by the present development work done on it. Located as it is, and with the showing of ore in it, I consider it alone is worth many thousands of dollars.

DUMPS:

In addition to the concentrating ore now in the stopes of these mines, there has been accumulated in four large dumps, conveniently located to be handled, the vast amount of 1,100,000 tons of somewhat lower grade of ore. These dumps were carefully sampled and assayed by me and the minimum value of the ore contained in them is $5.70 per ton. Indeed, it is my opinion that this ore will run somewhat higher than this. But these figures represent unquestionably the minimum in value. By first concentrating this ore, and then subjecting the tailings to treatment by cyanide, I have recovered 93% of the values. Figuring, however, only 80% the saving which can be made by concentrating alone, there would be a recovery from each ton of ore of $4.58, or a profit of $2.05 for each ton of ore handled, after having deducted $2.30, the estimated cost of handling the ore or a total profit of $2,266,000.00.

RECAPITULATION OF VISIBLE ORE-ALL SOURCES:

Bismark Vein	$4,943,864.00
Seven-Thirty Vein	825,000.00
Dumps	2,266,000.00
Total	$8,034,864.00

BURLEIGH TUNNEL:

This tunnel starts from an elevation of a few feet above the level of the west fork of South Clear Creek, and just at the western end of the town of Silver Plume. The course of the tunnel is north 30 degrees west. The size of the tunnel is 7' x 8' for the greater part of its length which is 2,400 feet. At a point 2,100 ft. from the portal of the tunnel, the Phillips vein is intersected. A drift is driven west on this vein about 1,125 ft. from the end of this drift a cross-cut has been started north for the purpose of cutting the Seven-Thirty vein at a point under the Seven-Thirty shaft. It will require approximately 800 ft. of cross-cut tunnel to reach the Seven-Thirty vein. The cross-cut will cut the vein at a depth of 290 ft. below the present bottom of the shaft, and 200 ft. below the Diamond Tunnel Level in the Bismark vein.

The purpose of this tunnel is to furnish drainage, ventilation and transportation facilities for both the Bismark and Seven-Thirty veins, and in fact, the entire property. The cost of wagon haul from the mouth of the Burleigh Tunnel to the sampler at Georgetown, will be but $.50 per ton, against $2.25 and $1.00 from the Seven-Thirty shaft and Diamond Tunnel respectively. The completion of this tunnel to a connection to the workings of Bismark and Seven-Thirty will place this entire property in an ideal position for commercial mining for many years to come. This tunnel will, when finished, make practically a new mine of this property by opening up a great deal of new ground, and by providing unsurpassed facilities for mining on a most economical basis, the couple million tons of concentrating ore broken and now on the timbers in the old stopes in this mine, ready for removal.

RECOMMENDATIONS

My estimate of the profit in the concentrating ore in these properties and the dumps, is based absolutely on the erection of a concentrating mill on one of the mill sites included in this group of claims, for these ores cannot be handled except in such a mill, owned and operated by the management of the mines. Obviously, the most suitable place for the erection of such a mill is at the mouth of the Burleigh Tunnel, for when this tunnel is completed, all ores from the veins will be handled through it. The ores from the dumps can be most economically transported to this mill by means of a system of aerial tram. I would recommend the erection, at first of a daily capacity of 300 tons designed with a view to being increased to a capacity of 500 tons a day, for it will not be practical to deliver to the mill over 300 tons a day until the Burleigh tunnel shall have been

completed, the aerial trams erected, the Seven-Thirty levels and shaft cleaned out and repaired and large ore chutes constructed for the purpose of carrying the ore down through the Seven-Thirty shaft to the tunnel. When this work has been completed it will be easily practicable to deliver 500 tons a day to the mill, but in the meantime, a 300 ton mill will be capable of handling all the ore that can be conveniently delivered to it, and will be making a great profit. Such a mill will cost not in excess of $35,000.00.

Accordingly, the improvements necessary to put the mine in condition to be worked to the greatest possible advantage are:

1. The erection of a mill at a cost of $35,000.00.
2. The completion and equipment of the Burleigh Tunnel to a connection with the Seven-Thirty shaft, at a cost of $20,000.00.
3. Cleaning out and repairing the levels and the portion of the shaft of the Seven-Thirty mine, which are now under water, at a cost of $5,000.00.
4. Construction of ore chutes referred to above at a cost of $5,000.00.
5. Erection of aerial trams from dumps to mill at a cost of $8,000.00.

These improvements will require a total expenditure of $73,000.00 which can be taken care of out of production of the smelting ores from the mine, which is in the nature of a quick asset.

CONCLUSION

The Dives-Pellican and Seven-Thirty properties present one of the most attractive mining enterprises that has ever come within my observation. Mines with possibilities so great are exceedingly rare. While it will require many years to handle the ore now in the mines and in the dumps, yet this ore will yield a steady profit, the size of which will depend solely in the quantity of ore handled, etc. etc.

Denver, Colorado, July 15, 1903

Signed:
O.O. McReynolds

Columbine Metals, Inc.
916 Broadway,
Denver 3, Colorado.

February 11, 1959

OFFICIAL FILE COPY
O. M. E.
RECEIVED FEB 13 1959

DATE	INITIALS	CODE
2/12	N. G.	235
2/16	alb	500

Mr. Frank E. Johnson, Acting Director
U. S. Department of the Interior
Office of Minerals Exploration
Washington 25, D. C.

Subject: Docket No. DMEA-5000
(Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven-Thirty Group
Clear Creek County, Colorado.

Dear Mr. Johnson:

This is to acknowledge with thanks your letter of January 29, 1959, with the copy of Regulations for obtaining Federal assistance in financing mineral exploration, under which the new Office of Minerals Exploration will operate.

We wish to participate in the OME Program and I have already started with our printer in getting in an Application which will be revised, in accordance with the new regulations. I expect this to be completed within ten (10) days.

The proposed exploration and costs will be the same as in Docket No. DMEA-5000.

Sincerely yours,

W. D. McMillan

W. D. McMillan
Managing Vice President
Columbine Metals, Inc.

WDMcM:rfb

cc: Mr. James Townsend
Executive Officer
OME, Denver, Colorado

Mr. James M. Knowles
140 Hall Street
Grand Junction, Colorado

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
	[illegible]	500
	[illegible]	500
1/22	Selfridge	120
		~~110~~
		~~100~~
1/29	C	200
		500

JAN 29 1959

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000
(Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven-Thirty
Group
Clear Creek County, Colorado

Dear Mr. McMillan:

Enclosed is a copy of the regulations for obtaining Federal assistance in financing mineral exploration under which the new Office of Minerals Exploration will operate.

If you wish that your partly processed DMEA application be considered under the OME regulations, please complete and return four of the copies of the attached application, MME Form 40.

Your attention is called especially to the certification which when signed declares that you would not ordinarily undertake the proposed exploration under current conditions and circumstances at your sole expense, and to Item 1(a) - and 1(b) if applicable - which relates to information used to determine your financial eligibility under the new exploration program. Information that is included in your DMEA application need not be repeated in the OME application, but you can add new information if you so desire.

In your application there is a contradictory statement in Item 1(c) Applicant's Property Rights. On a typewritten sheet attached to the application it is stated, "The land is held under lease," and the present terms are given. In the "Report on the Bismark-Pelican, Wisconsin-Corry City, Seven-Thirty, Dives, Dunkirk and Baxter Mines" by W. D. McMillan, Managing Vice-President, on page 3 it is stated, "The land is owned by Columbine Metals, Inc." Please clarify the statements about your property rights, and if you do not own the land we will need a copy of the lease.

We will also need a property map showing where the proposed work is to be done.

8623

Also enclosed are six copies of the Lien and Subordination Agreements, NME Form 52, referred to in Item 2(c) of the application. Early submittal of five completed copies of the form will save time in case you apply for exploration assistance under the CNE program and a contract is granted.

If you do not wish to participate in the CNE program, we shall appreciate being so informed.

Sincerely yours,

Frank E. Johnson

Acting Director

Enclosures

JWAlt/fw-1/16/59
cc: Docket
Dir.Read.File
REG. III (2)
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-10	Griswold	500
9/10	Selfridge	120
"	Johnson	110
"	Butterworth	100
		220
		225

SEP 10 1958

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven Thirty Group
Clear Creek County, Colorado

Dear Mr. McMillan:

We have your letter of September 5, regarding your application for Government assistance in an exploration program on the cited property.

The Congress recently enacted legislation for the continuance of the assistance program but the regulations are still being considered and the forms pertaining thereto being prepared; it is probable that this will take a period of several weeks. Just as soon as we have anything definite, we shall advise you, forwarding the necessary forms and instructions.

Sincerely yours,

W. D. McMillan (for)

Administrator

WRGriswold/izm 9-9-58
cc: Admr.'s Reading File
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
DMEA FT Reg. 3 (2) w/2cc's of incoming letter.

8623

COLUMBINE METALS INCORPORATED
501 Kittredge Building
Denver 2, Colorado

September 5, 1958

DMEA		
RECEIVED SEP 8 1958		
DATE	INITIALS	CODE
9-8	C	220
"	Bro	500
		225

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

Re: Docket No. DMEA 5000 (Lead-zinc-copper)
Columbine Metals, Inc.
Bismark-Pelican, Wisconsin
Corry City, Seven-Thirty, Dives,
Dunkirk and Baxter Mines
Clear Creek County, Colorado

Dear Mr. Mittendorf:

Reference is made to your letter on the cited projects to me of May 26, 1958, and my reply on June 4, 1958.

The following was in the Mining Record of Thursday, September 4, 1958:

"One portion of the long-range minerals program became effective August 21 when the President signed an act authorizing the Secretary of the Interior to allocate funds to private industry for minerals exploration. The program will be administered by a new Office of Minerals Exploration, which will take over the functions of the defunct Defense Minerals Exploration Administration.

"Under the new law, the Secretary may determine the minerals eligible for exploration assistance and the proportion of the cost borne by the Government. Maximum Government participation in any one contract is $250,000. and the applicant is required to show that funds for the project are not available from commercial sources on reasonable terms. Repayment of any loan, with interest, is required through payment of royalties on any minerals produced from the project.

" Congress has appropriated $4 million for the new agency during the current fiscal year, with a proviso that loans could not exceed 50 percent of the cost of a project."

The company that I represent would like to know when this new office of Minerals Exploration will begin functioning. We plan to resubmit our application with some minor changes.

Sincerely yours,
W. D. McMillan
W. D. McMillan, Managing Vice-President

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/17	Maxwell	500
6/18	Selfridge	130
6/18	Lamb	130
6/18	Degaard	130
"	Nelson	110
"	Stillwell	100
		225

JUN

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven Thirty Group
Clear Creek County, Colorado

Dear Mr. McMillan:

With reference to your letters of June 4, 1958, regarding Government assistance on the cited exploration project, we are enclosing a copy of the June 6 press release covering termination of the present Defense Minerals Exploration Administration program.

The time remaining before the expiration of the Defense Minerals Exploration Administration program would not be sufficient to process reconsideration of your application to completion. However, you will note from the press release that legislation has been introduced in the Congress to continue the Defense Minerals Exploration Administration type of program. If such legislation is enacted, upon written request, your application would be considered under the rules and regulations established for the new program.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

Enclosure

WRGriswold/er (rewritten 6/16 & 17/58)
Copy to: Docket (6/13/58)
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/16	Irwin	500
		120
		110
		100
		220
	Kamp	
	Kilsgaard	

Noted:
Noted

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven Thirty Group
Clear Creek County, Colorado

Dear Mr. McMillan:

With reference to your letters of June 4, 1958, regarding Government assistance on the cited exploration project, we are enclosing a copy of the June 6 press release covering termination of the present Defense Minerals Exploration Administration program. ~~We regret, therefore, that we are unable to give further consideration to your application.~~

Congress is presently considering legislation designed to continue Government assistance in exploration projects. If such legislation should be enacted, and if the rules and regulations should be such that they would be applicable to your property, it would be quite in order for you to re-apply to us for Government assistance.

Sincerely yours,

Administrator

Enclosure
WRGriswold/er rewritten 6/16/58
(6/13/58)
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/13	Griswold	500
		120
		100
		225
		225

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven Thirty Group
Clear Creek County, Colorado

Dear Mr. McMillan:

With reference to your letters of June 4, 1958, regarding Government assistance on the cited exploration project, we are enclosing a copy of the June 6 press release covering termination of the present Defense Minerals Exploration Administration program. We regret, therefore, that we are unable to give further consideration to your application.

Sincerely yours,

Administrator

WRGriswold/er 6/13/58
Copy to: Docket
Admr R File
Op.Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

Enclosure

8623

COLUMBINE METALS, INCORPORATED
501 Kittredge Building
Denver 2, Colorado

June 4, 1958

DMEA
RECEIVED JUN 10 1958

DATE	INITIALS	CODE
6/10	[illegible]	2225
6/10	[illegible]	500

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

RE: Docket No. 5000 (Lead-zinc-copper)
Columbine Metals, Inc.
Bismark-Pelican, Wisconsin
Corry City, Seven-Thirty, Dives,
Dunkirk and Baxter Mines,
Clear Creek County, Colorado

Dear Mr. Mittendorf:

With reference to our letter of June 4, 1958, will you please substitute the enclosed revised page 2 for the page 2 of the letter you received as there was an error in the level description.

Sincerely yours,

W. D. McMillan (by Am)

W. D. McMillan,
Managing Vice-President

Encl.
WDMcM/am

Mr. C. O. Mittendorf
Washington 25, D. C.

LEVEL, cont'd		VEIN, cont'd
Gwenzie Raise	bottom open on Burleigh Tunnel	Pelican-Bismark
Burleigh	open to within about 250' of the Seven-Thirty	Pelican-Bismark

The Ricky Winze below the Burleigh Tunnel level shows that the ore continues below the Burleigh Tunnel and the Mendota, about 600 feet from the portal has been mined to 400 feet below the Burleigh Tunnel, but no exploration is proposed below the Burleigh Tunnel.

We trust that you will reconsider reopening our application to the extent of your present authority.

Sincerely yours,

W. D. McMillan,
Managing Vice-President

WDMcM/am

COLUMBINE METALS INCORPORATED
501 Kittredge Building
Denver 2, Colorado

June 4, 1958

DMEA
RECEIVED JUN 6 1958

DATE		CODE
6/6	C	220
6/6	copy.	500
		225

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

RE: Docket No. DMEA 5000 (Lead-zinc-copper)
Columbine Metals, Inc.
Bismark-Pelican, Wisconsin
Corry City, Seven-Thirty, Dives,
Dunkirk and Baxter Mines,
Clear Creek County, Colorado

Dear Mr. Mittendorf:

We have your letter of May 26, 1958 relative to the cited project, and note that you would be glad to request an examination by the Field Team, if it could serve any good purpose, which we are attempting to prove in this letter.

Your principal objection to this project was that a year ago another company (Lisbon Valley Uranium Company) applied for a DMEA project on substantially the same properties. The Field Team, while using such data as they had available, reported that no real field examination was possible, since so many of the significant mine areas were inaccessible due to flooding and caving.

It is understood from the management of Lisbon Valley Uranium Company that the principal reason for the denial of their application was an error on their part in the directive of the proposed exploration work, which would not have reached the objective.

The following workings have been reopened by Lisbon Valley Uranium Company at a cost of over $50,000.00, and since this work was done the claims in the subject application have been purchased by Columbine Metals, Inc.

LEVEL		VEINS
Zero	opened about 1100 ft. to caved workings	Pelican-Bismark
Illinois	opened to junction of Pelican-Bismark and Wisconsin	Pelican-Bismark and Wisconsin
Diamond	opened to North face and 400'W on Corey Intrusity	

Mr. C. O. Mittendorf
Washington 25, D. C.

LEVEL, cont'd		VEIN, Contd
Gwenzie Raise	botton open on Burleigh tunnel	Pelican Bismark
Burleigh-Ricky	Winze open to within about 250' of the Seven-Thirty	Pelican Bismark

The Ricky Winze shows that the ore continues below the Burleigh tunnel and the Mendota, about 600 feet from the portal has been mined to 400 feet below the Burleigh Tunnel, but no exploration is proposed below the Burleigh Tunnel.

We trust that you will reconsider reopening our application to the extent of your present authority.

Sincerely yours

W. D. McMillan

W. D. McMillan,
Managing Vice-President

WDMcM/am

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/22	Griswold	500
5/23	Selfridge	130
5/23	Lenz	130
5/23	Kilsgaard	130
"	Johnson	110
"	Mittendorf	100
		225

MAY 26 1958

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven Thirty Group
Clear Creek County, Colorado

Dear Mr. McMillan:

We have your letter of May 19, 1958, relative to the cited project. We would be glad to request an examination of the property by the Field Team, if it could serve any good purpose.

However, about a year ago another concern applied for a DMEA project on substantially these same properties. The Field Team, while using such file data as they had available, reported to us that no real field examination was possible, since so many of the significant mine areas were inaccessible, due to flooding and caving. We presume that the same conditions prevail today.

If, at any time, your company should reopen the old mine workings to the extent that a proper examination could be made by our Field Team, permitting of a reasonable appraisal of the proposed work, we would be glad to give further consideration to a reopening of your application. Assuming, of course, that we still had authority to enter into exploration projects, as at present.

With regard to your and Mr. Albert T. Fisher coming to Washington, you may be sure that any Applicant is welcome to call upon us. Nevertheless, I may say that the application to which I have referred, submitted a year or so ago, was covered in as careful and thorough a manner as was possible, under the circumstances. Therefore, unless you have significant information of a recent nature (which is not shown in your application) we could not offer you any encouragement.

WRGriswold/er 5/22/58
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)

Sincerely yours,

C. O. Mittendorf

Administrator

8623

Investment Service Company
Investment Securities
FIRST NATIONAL BANK BUILDING
Denver 2, Colorado

TELEPHONE
ALPINE 5-2091
TELETYPE
DN-796

DMEA
RECEIVED MAY 21 1958

DATE	INITIALS	CODE
5/21		225
5/21		500
		225

May 19, 1958

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

Re: DMEA 5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Bismark-Pelican, Wisconsin
Corry City, Seven-thirty
Dives, Dunkirk & Baxter Mines
Clear Creek County, Colorado

Dear Mr. Mittendorf:

Reference is made to your statement in paragraph 3 of your letter of May 15, 1958, that - although the past production of subject property was noted, careful study indicated that the probability of disclosing significant ore reserves under proposed program was not sufficiently promising to justify Government participation and that accordingly, our application was denied.

We respectfully call to your attention that indicated reserves of Lead-Zinc-Copper ores of the subject mines amount to 623,000 tons of ore above the Burleigh Tunnel as stated in Section 2 (d).

I was personally familiar with this property in 1950 when John Smith had a DMEA contract, and I was convinced at that time that the project had a lot of merit. More detailed examination of this project in the preparation of DMEA 5000 and further consultation with Albert T. Fischer and James W. Knowles, Vice-Presidents and Chairmen of the Board of Columbine Metals, Inc. has convinced me that an even greater tonnage will be disclosed by the proposed project. I am certain that a telephone discussion with the Denver regional office of the Bureau of Mines will disclose the availability of sufficient data in the files of the regional office to justify at least an examination by a DMEA examining team.

Mr. C. O. Mittendorf, Administrator
Washington 25, D. C.

Albert T. Fischer and I propose to come to Washington to discuss a possible re-opening of our application, from our personal knowledge of its merits.

Very truly yours,

W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.

WDM/am

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/14	Griswold	500
5/14	Selbridge	130
5/14	Sandt	130
5/14	Williams	
"	Johnson	110
15	Mittendorf	100
5/16	C O	220

MAY 15 1958

Mr. W. D. McMillan
Managing Vice-President
Columbine Metals, Inc.
501 Kittredge Building
Denver 2, Colorado

Re: Docket No. DMEA-5000 (Lead-Zinc-Copper)
Columbine Metals, Inc.
Dives-Pelican, Seven Thirty Group
Clear Creek County, Colorado

Dear Mr. McMillan:

Your application for aid for an exploration project and other data available to us in Washington concerning your above-named 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 past production 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.

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

WRGriswold/er 5/13/58
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region ~~(3) 44~~
Chron

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code

May 13, 1958

Memorandum for the Docket

From: Director, Division of Base Metals

Subject: Justification for Denial of Docket No. DMEA-5000, Columbine Metals, Inc., Dives-Pelican, Seven Thirty Group, Clear Creek County, Colorado, Lead-Zinc-Silver.

This poor, tired old dog wearily raises its head about once every year.

Silver Plume was one of the very good early-day silver-lead camps of Colorado. As with almost all of the Front Range mines, the ores were relatively shallow and, in the natural course of events, the mines were worked out, caved, and abandoned.

Endless attempts have been made to revive the old camp, dumps and stope fills have been milled, etc. About every year a new concern takes hold of the old mines and tries to get the DMEA to "carry the ball" in its attempt to revive the worn out mines.

W. R. Griswold

WRG/er
Copy to: Docket
Admr R File
Chron.

8623

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

ORIGINAL FILE COPY

RECEIVED MAY 9 1958

5/9 C 220
5/9 w/ps. 500

May 8, 1958

Re: DMEA 5000; Lead-Zinc-Silver
$169,645.70
Columbine Metals, Inc.
Bismark-Pelican Group
Clear Creek Co., Colorado

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, USBM

Subject: Review of application dated April 30 and received Washington May 5, 1958

The applicant desires DMEA assistance in a poorly defined project of drifting, raising and rehabilitation at an estimated $170,000 cost. The detailed objectives are obscure and no maps or engineering measurements are presented to explain and justify the project.

Mr. Harshman, in his letter transmitting the application, points to insufficient evidence of title, overlapping boundaries with land previously certified, and previous denials under prior application.

I conclude further consideration of this application is unwarranted and recommend denial.

O. M. Bishop

O. M. Bishop

cc: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Callaway
F I L E S

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

IN REPLY REFER TO:

DMEA
RECEIVED MAY 8 1957
5/8 C 220
5/8 wks. 500

May 7, 1957

Memorandum

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

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

Subject: Review of application, DMEA 5000 (lead-zinc-silver) Columbine Metals, Inc., Pelican-Dives, Seven Thirty Group, Clear Creek County, Colorado

The applicant proposes to explore for lead-zinc-silver ore deposits on lode mining claims located near the town of Silver Plume, Colorado. The proposed project of drifting, raising, and rehabilitation would cost $166,325, as estimated by the applicant.

The Acting Executive Officer points out that the application is lacking in several respects. The applicant could properly be asked to provide legal instruments showing conveyance of the property, and maps and sections showing the proposed mine openings and their objectives. The alternative would be to refer the application to the Field Team for further processing.

W. P. Williams

W. P. Williams

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

May 5, 1958

Columbine Metals, Inc.
501 Kittredge Bldg.
Denver 2, Colorado

Subject: DMEA-5000

Gentlemen:

Your application for exploration assistance, dated April 30, 1958 submitted to our office at Denver, Colorado has been assigned Docket Number DMEA-5000 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, Director
Operations Control and
Statistics Division

Copy to: Region III.

U. S. Government Messenger Envelope

Standard Form No. 65 (Rev. 1/46)

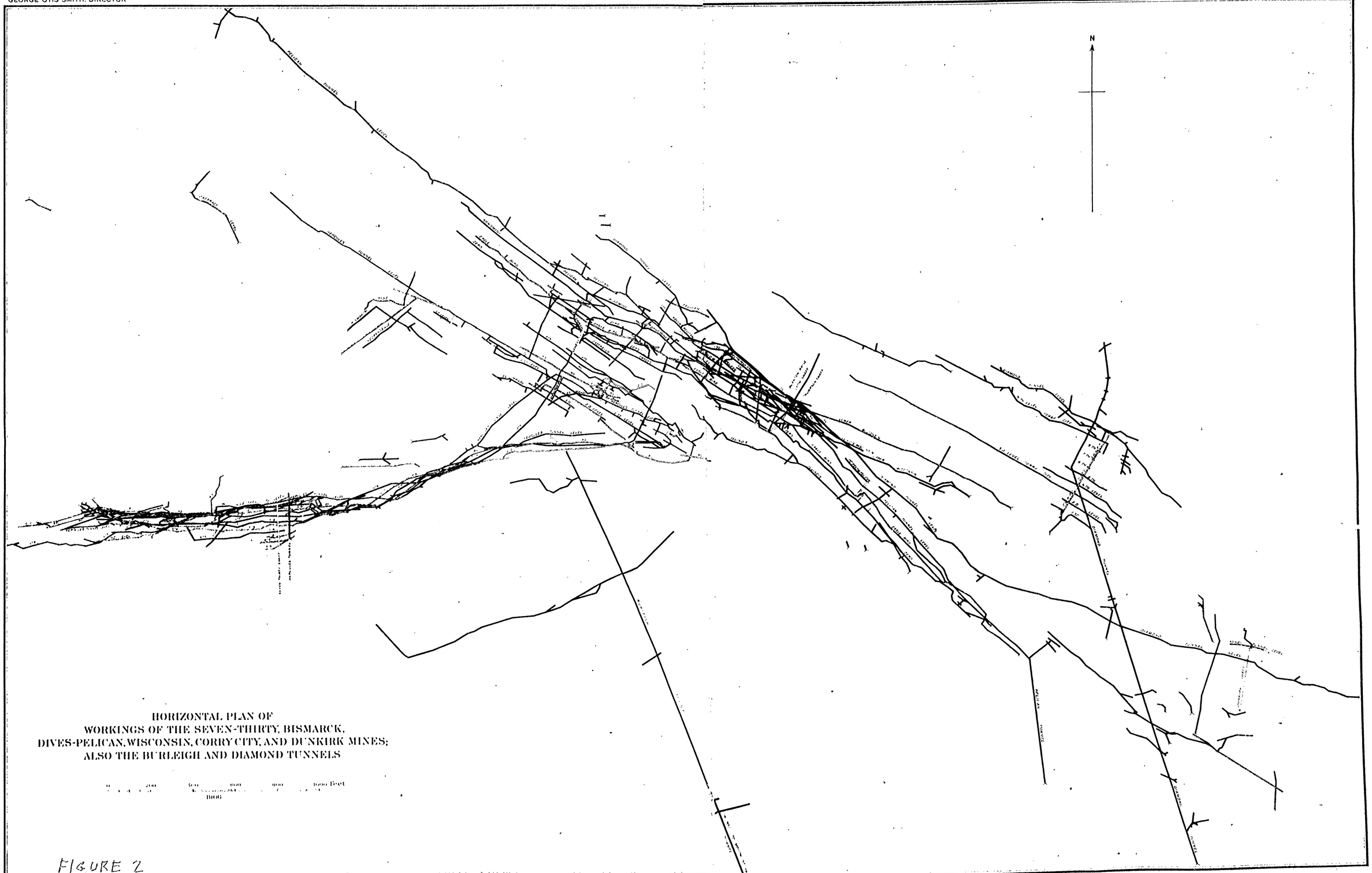
1. Use blocks consecutively, one at
2. Void previous block.
3. Write clearly.

NAME OR TITLE OF PERSON, DEPARTMENT, ADDRESS, AND ROOM		NAME OR TITLE OF PERSON, DEPARTMENT, ADDRESS, AND ROO	
DR. SWITZER USAMM	RUN 294 STOP	Mr. Hauk 4453 Int.	RUN STOP
~~Charles Milton~~ ~~USES~~ ~~C.S.B. Building~~ ~~C.S.B. Bicycle~~	RUN STOP		RUN STOP
~~Mr. Wamsley~~ ~~Int.~~	RUN STOP		RUN STOP
Mr. Ewing Room 3211 USA	RUN STOP		RUN STOP
Yates	RUN STOP		RUN STOP
~~Management Analyst~~ ~~Room 223~~	RUN STOP		RUN STOP
~~Mr. Hubbell~~ ~~Rm. 5227~~ ~~Interior~~	RUN STOP		RUN STOP
~~Room 5227~~ ~~Interior~~	RUN STOP		RUN STOP
~~[illegible]~~ ~~[illegible]~~	RUN STOP		RUN STOP
Miss Hall 5265, Int.	RUN STOP		RUN STOP

Send surplus envelopes to supply room for reissue.

Use other side

Use RUN and STOP only when messenger service between Government buildings in Washington is required. Your mail room has RUN and STOP information.



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

FIGURE 2

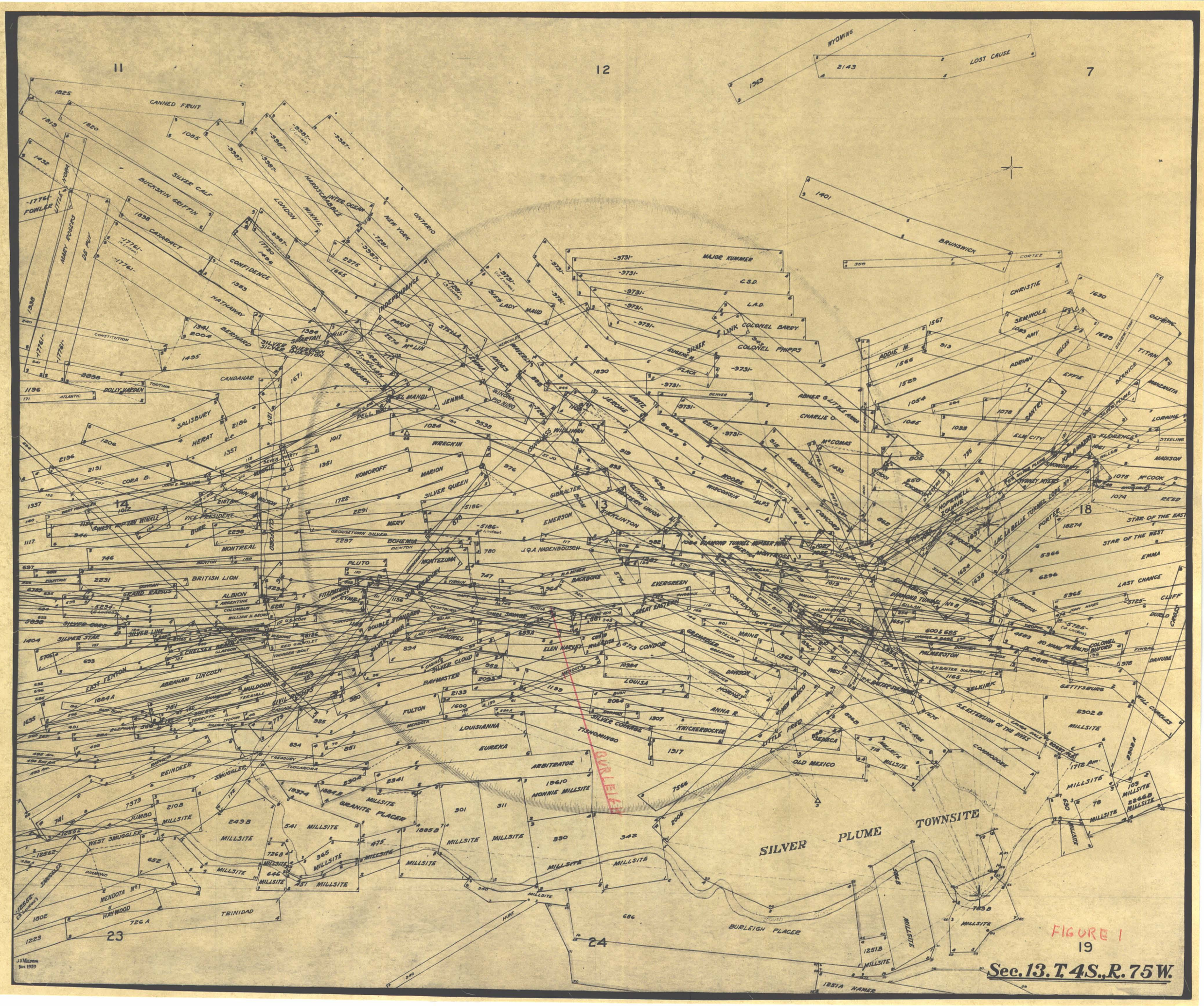


FIGURE 1

Sec. 13. T. 4S., R. 75W.