

March twenty-sixth
1959

First National Bank
Wallace
Idaho

OFFICIAL FILE COPY		
O. M. E.		
RECEIVED APR 20 1959		
DATE	INITIALS	CODE

Gentlemen:

We are contemplating doing some exploration work in the property of the Rainbow Mining and Milling Company, Ltd., and also in the so-called Triangle Area, which is jointly owned by Day Mines, Inc. and American Smelting & Refining Company.

The work is to be carried on through the 3000 level of the Silver Summit Mine. We have done considerable work in the Rainbow property and outside of opening up a small body of ore it has given negative results. We now propose to explore that portion of the Rainbow and Triangle properties that lies south of the Polaris fault. We propose to commence at a point west of the fault and drive a lateral in the hanging wall (south side of the fault). Lateral work will consist of approximately 1860 feet of drifting and crosscutting plus some 4250 feet of diamond drilling.

The estimated cost of the project is approximately \$350,000 and we are applying to you for a loan to cover 50% of this cost. As security for this loan, we would give you a lien on any ore discovered.

Please advise as to whether you will be able to make such a loan, quoting interest rates.

Yours very truly,

L. J. Randall, President

LJR:dv

RECEIVED
APR 13 1959

U. S. G. S.
SPOKANE, WASH.

NON-PRIVILEGED DOCUMENT
TO BE PHOTOCOPIED AND PRODUCED
DO NOT CODE

BATES NO. 0441

THE FIRST NATIONAL BANK

OF WALLACE

WALLACE, IDAHO
March 27, 1959

OFFICIAL FILE COPY		
O. M. E.		
RECEIVED APR 20 1959		
DATE	INITIALS	USE

Mr. L. J. Randall, President
Hecla Mining Company
Wallace, Idaho

Dear Sir:

We have your letter of March 26th requesting a loan of \$175,000 to cover exploration work in the Rainbow and Triangle properties. The legal loan limit of this bank is \$50,000, so we can not possibly loan you \$175,000. The security which you offer, which is a lien on any ore discovered, we feel inadequate for the banks protection.

Accordingly we can not grant you any portion of or all of this loan. We appreciate your offering us this business and are sorry we can not accomodate you.

Yours truly,

E. M. FLOHR
President

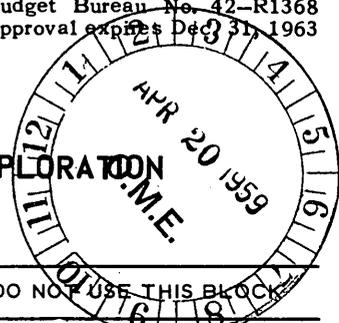
EMF:cfh

RECEIVED

APR 13 1959

U. S. G. S.
SPOKANE, WASH

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION



APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

Pursuant to Public Law 85-701 (72 Stat. 700; 30 U.S.C. 641)

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

Hecla Mining Company
Box 320
Wallace, Idaho

RECEIVED
APR 13 1959

U. S. G. S.
SPOKANE, WASH

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER

6039

DATE RECEIVED

4-20-59

REGION

I

DIVISION CODE

500

BUSINESS ORGANIZATION
(Check one)

INDIVIDUAL

CORPORATION

PARTNERSHIP

OTHER (Specify)

<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
L. J. Randall	Wallace, Idaho	President
J. L. McCarthy	Orofino, Idaho	Vice-President
R. E. Sorenson	Seattle, Washington	Vice-President
John R. Matthews	Wallace, Idaho	Secretary-Treasurer
W. H. Love	Wallace, Idaho	Manager of Mines
H. E. Harper	Spokane, Washington	Chief Geologist

STATE IN WHICH FIRM IS ORGANIZED Washington

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE

Lead, Zinc, Copper, Antimony

PROPERTY NAME

LOCATION COUNTY STATE

See attached statement

ESTIMATED COST OF PROJECT

\$ 299472

GENERAL INSTRUCTIONS

Before filling out this application, please read the OME Regulations for Obtaining Federal Assistance in Financing Explorations for Mineral Reserves (30 CFR Chap. III). 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 2, existing mine workings and geology in item 3, and the proposed exploration work in item 5. 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 3(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 Office of Minerals Exploration, Department of the Interior, Washington 25, D. C., or with the nearest OME 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 com-

plete, to the best of his knowledge and belief, and that he would not ordinarily undertake the proposed exploration under current conditions and circumstances at his sole expense.

April 8 / 1959
DATED

L. J. Randall
BY (Signature)
President
TITLE

w/o copies of letters to & from banks. See original apl.

INFORMATION REQUIRED WITH THIS APPLICATION

1. Financial Eligibility:

(a) Submit evidence of efforts made within 90 days preceding the filing of this application to obtain credit from your bank of account and at least one other banking institution or other private source of credit. Such evidence shall include true copies of correspondence which show: (1) date of loan request, (2) amount and terms requested, (3) proposed use of loan funds, and (4) the replies from credit sources. If the loan was offered under terms which you consider unreasonable, state why you consider them so.

(b) List names and addresses of affiliated, parent, or controlling companies or organizations and state extent and nature of their interest.

(c) State how you propose to furnish your share of the exploration cost.

2. Applicant's Rights in Land:

(a) State your interest in the land and mineral rights, whether owner, lessee, purchaser under contract, or other. If you are not the owner, submit one true copy of the lease, contract, or other document (with address of owner) under which you control the property. Describe all liens, mortgages, or other encumbrances on the land and state book and page number and official place where recorded.

(b) 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 adjacent land which you own or control. Describe any part of the land or workings which should not be subject to Government royalty and liens. If the land consists of unpatented claims, state book and page number for each recorded location notice, including amended locations, and official place where recorded. State all the names by which you know the property.

(c) For all land or mineral rights encumbered or not owned, submit five copies of Lien and Subordination Agreements on MME Form 52. If the agreements cannot be obtained, state reasons and provide copies of letters of refusal.

3. 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 land. Include existing mine workings and all production facilities.

(b) State your interest, if any, in operations described in (a).

(c) State, if 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, giving quantities and grades and sampling methods used. Support 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 have, indicating whether you require their return.

4. Accessibility of Property:

(a) To aid the OME representative who may examine the property, state name and address of person who will meet him; give directions for reaching the property; and describe accessibility of property and of any mine workings.

(b) Name the shipping and supply points and state the distances to the property.

5. Exploration Work:

(a) Describe fully the proposed exploration work giving individual footages and sizes of openings for each item of

work. Use narrative, maps, plans, and sections as necessary. Show 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 land boundaries or to the closest identifiable corner.

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

(c) If an OME contract is executed, state how soon thereafter work would be started and finished. State your anticipated average daily or monthly rate of progress for each type of work.

6. Experience:

State your operating experience and background to conduct this exploration work and also that of the person who will supervise the work.

7. Estimate of Costs:

Furnish detailed estimates of the necessary costs for each item of the work proposed in 5(a) under the headings listed below with a total for each heading and the estimated total cost of the work. Costs for any work to be performed by an independent contractor should be listed separately under category (a) below. Costs for any work that is not to be performed by an independent contractor should be listed under categories (b) through (g).

(a) Independent contracts. State the total cost of any proposed independent contract for all or any part of the work, and the number of units and the unit cost for each type of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, or 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. The cost of supervision, engineering and geological services, outside consultants, and labor should be itemized by numbers and classes of employees; rates of wages, salaries or fees; and periods of employment. State whether these services are available.

(c) Operating materials and supplies. List items of material and supplies giving quantity and cost of each. 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 equipment and tools costing \$50 or more per unit. Give specifications and indicate how each item is to be acquired—i.e., rented, purchased or provided by the applicant. If rented or purchased, state the estimated rental or purchase price. If furnished by the applicant, state condition and present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of 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 in the exploration work.

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

(g) Miscellaneous. Describe the type and estimate the cost of repairs and maintenance of the operating equipment listed in 7(d). Do not repeat initial repairs listed in 7(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—The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to: (1) acquiring, using, or possessing land and any existing improvements, facilities, buildings, installations, and appurtenances, or the depreciation and depletion thereof; (2) general overhead, corporate management, interest and taxes (other than payroll and sales taxes); (3) insurance (other than employees' liability insurance); and (4) damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).]

NON-PRIVILEGED DOCUMENT
TO BE PHOTOCOPIED AND PRODUCED
DO NOT CODE

BATES NO. 0441

HECLA MINING COMPANY

Wallace, Idaho

EXPLORATION OF RAINBOW AND TRIANGLE AREAS

1. (a) See attached copy of application to obtain credit and attached replies.
1. (b) Not applicable
1. (c) Applicant will furnish its share of the cost in cash and in use of equipment and facilities owned by applicant.
2. (a) Applicant's Interest in the Rainbow and the Triangle Ground is that of Lessee under Lease and Agreement with the Rainbow Mining and Milling Company Limited covering the Rainbow Ground and the Day Mines, Inc., and American Smelting and Refining Company covering the Triangle Ground. One copy of each of the respective agreements is attached hereto.

The Rainbow Property is a part of the land included in Defense Mineral Exploration Administration Contract No. Idm-E-541, Docket No. DMEA 2879. The project completed under the DMEA contract has been certified as a discovery, and any ore found as a result of project work or any ore mined or transported through facilities made possible by contract work is subject to DMEA royalty until November 1, 1975.

2. (b) With respect to that certain land situated in the State of Idaho, County of Shoshone, indicated on a property map annexed hereto, and described as follows:

Rainbow Mining and Milling Company Limited (owner)

Patented claims covered by mineral survey #3191

Blue Ribbon	Elatz	Jane Wray
Gaylord	Bobbie	Knob Hill
John D.	Brooklet	Lookout
July	Horseshoe	Rainbow #2
Thursday	Hazzard	Spider
Argentine Extension	James H	Vera

Patented claims covered by mineral survey #2761

Mountain View Pride of the Rockies Rainbow Sunshine

Day Mines, Inc. American Smelting and Refining Company (Joint Owners)

Unpatented lode mining claims situated in the Evolution Mining District to each and all of which there has been assigned mineral survey #3508 and the respective notices of location of which are recorded in the office of the County Recorder of Shoshone County, Idaho, as follows:

<u>Name of Claim</u>	<u>Book of Quartz Locations Number</u>	<u>Page Number</u>
Triangle No. 1	27	635
Triangle No. 2	27	636
Triangle No. 3	27	637
Triangle No. 4	27	638

Triangle No. 5	27	639
Triangle No. 6	27	640
Triangle No. 7	27	641
Triangle No. 8	27	642
Triangle No. 9	29	16
Triangle No. 10	29	17
Triangle No. 11	29	18
Duo No. 7	30	100
Duo No. 8	30	101
Duo No. 9	30	102
Triangle No. 3 Fraction	31	177
Triangle No. 5 Fraction	31	178
Buzzard	29	573

The operator represents and undertakes and guarantees that by virtue of contractual arrangement with others it has the necessary right, title and interest to perform and carry out all of its undertakings and obligations set forth in this contract and to secure the Government in the payment of any percentage royalty on production from said land which may accrue to the Government.

The project outlined in this application will explore a portion of the Rainbow and Triangle properties lying south of the Polaris fault. It is our understanding that there would be no double royalty payments to DMEA and its successor CME. Production from the Rainbow property and any production from the Triangle property transported through the Silver Summit 3000 level DMEA workings is subject to DMEA royalty. However, it is suggested that any ore discovered in the Rainbow-Triangle property, as outlined above, be made subject first to CME royalty. Thereafter royalty obligations provided under DMEA Contract No. Idm-E-541 would apply. The footwall of the Polaris' fault could be used as a dividing line between ore subject first to CME royalty and ore subject only to DMEA royalty.

3. (a) The principal mine workings in the vicinity of the proposed project are shown on plates 1, 2, and 3 accompanying this application. It will be noted that a part of the hanging wall block of the Polaris fault that will be explored by the proposed project has been explored by several adit levels. The most extensive of these adits are the Rainbow tunnel and the adits on the Rainbow and Pride of the Rockies claims (see plates 1 and 2). The Rainbow tunnel is essentially an adit crosscut approximately 6300 feet long. The Polaris fault is cut in the adit about 1200 feet from the portal and the adit extends about 5100 feet south of the fault. The only vein structure of note exposed south of the fault is the Triangle vein, about 5000 feet from the portal. This small vein structure appears to lie too far south to be tested by the project outlined in this application. The adits on the Rainbow and Pride of the Rockies claims test a small vein in the immediate hanging wall area of the Polaris fault.

No work has been done between the adit levels and the Silver Summit 3000 level (elevation -300 feet), a vertical interval of about 3250 feet, to explore the hanging wall section of the Polaris fault. The footwall block of the Polaris fault in the Rainbow property was explored on the Silver Summit 3000 level as part of the DMEA East Polaris project (see plate 3). Three diamond drill holes from the Silver Summit 3000 level workings in the footwall block of the Polaris fault test portions of the hanging wall block in the proposed exploration area. These holes in themselves do not adequately test the block nor is it considered feasible to adequately test it by further drilling from the footwall area.

The facilities used under DMEA Contract No. Idm-E-541 will be used to conduct work on the project outlined in this application.

3. (b) The Hecla Mining Company by means of various inter-company agreements has been responsible for work on the Silver Summit 3000 level. The "Polaris East Exploration Project" on this level was completed with DMEA assistance under Contract No. Idm-E-541.

3. (c) There has been no production from the block of ground to be explored by the proposed project.

Production from the Rainbow property has come mostly from the "north-south siderite vein" on the 3000 level of the Silver Summit mine. This vein lies in the footwall block of the Polaris fault and is shown on plates 2 and 3. Total production from the Rainbow area as of January 1, 1959 amounted to 13,390 tons of ore averaging 20.24 ounces of silver per ton and 0.53% copper.

There has been no production from the Triangle property.

3. (d) There are no known ore reserves within the block of ground to be explored under the proposed project.

Data on the reserves in the "north-south siderite vein" are contained in the final report to DMEA covering work under Contract No. Idm-E-541. This report was submitted in November 1958. Allowing for November and December production, this block contained as of January 1, 1959, 4,169 tons of ore averaging 33.88 ounces of silver per ton and 0.76% copper.

Possible ore below the 3000 level on the "north-south siderite vein" is being explored by diamond drilling from stations on the 3000 level. This drilling project is not yet completed.

3. (e) The general geology of the Coeur d'Alene district and the Silver Belt are well known and appear in numerous reports and publications. The DMEA-OME files also contain much specific information and detailed maps of the Silver Summit mine and adjacent areas. As OME personnel are familiar with the general geology as well as the mine geology, these details will not be repeated here and only those features which bear a specific relation to the proposed project will be discussed.

The project area lies near the east end of the Page-Galena mineral belt. This belt, approximately 13 miles long and 3000 feet wide, extends from the Page mine on the west to the Galena mine on the east. It has been the most productive of any of the mineral belts in the Coeur d'Alene district. The principal mines along this belt are from west to east the Page, Bunker Hill, Crescent, Sunshine, Polaris, Silver Summit, Coeur d'Alene Mines and the Galena.

Although the idea of mineral belts in the district is not new, it has only been in recent years that their real importance has been recognized. Much of the credit for this must go to the U. S. Geological Survey, who recently completed a study of

the district. Since the importance of the belts has been recognized, it has been one of the features used to guide exploration in the district. For example, a part of the justification for the "East Polaris Project" which was undertaken by Hecla with DMEA assistance was that it lay along this belt. The American Smelting and Refining Company is at present exploring an area along this belt between the Page and Bunker Hill mines. This company has also started a project to explore the belt immediately west of the Galena mine towards the Rainbow-Triangle area, which Hecla hopes to explore under the project outlined in this application. The Bunker Hill Company has plans to explore the belt between the Bunker Hill and Crescent mines. Thus the project outlined in this application will more fully explore one of the last remaining blocks along the Page-Galena mineral belt.

The ores in the Page-Bunker Hill section of the mineral belt are valued for lead, zinc and silver. In the Crescent-Galena section of the belt, commonly referred to as the Silver Belt, the ores are valued for silver, lead and copper. As a measure of the importance of lead and copper in the Crescent-Galena section of the Belt it would be well to note that the Sunshine mine, the largest mine in this section and the nation's largest silver mine, from 1904 through 1958 produced 120,269,592 pounds of lead and 50,448,620 pounds of copper. In addition, records indicate that for this period the Sunshine ore contained 39,704,385 pounds of antimony.

It is also interesting that the silver ores at the Galena mine contain from $2\frac{1}{2}$ to $4\frac{1}{2}$ times as much copper as the ores in the western portion of the Silver Belt. Of considerable interest is the "Lead Zone" ore body at the Galena mine (see plate 2). Although rich lead zones have been recognized in other ore shoots in the Crescent-Galena section of the belt, the Lead Zone ore body at the Galena mine appears to be of a different type than found elsewhere in this section of the belt. Whereas most of the veins in the area are siderite veins, the principal gangue mineral of the Lead Zone veins is quartz, and the principal ore mineral is galena. Some information on reserves of the Lead Zone ore body at the Galena mine has been released by the Vulcan Silver-Lead Corporation. In a proxy statement accompanying the notice of Vulcan's annual stockholders meeting, April 7, 1958, it is reported that the Lead Zone contains 13,140 tons of proven ore averaging 11.8 ounces of silver per ton and 10.8 percent lead, and 500,670 tons of probable ore averaging 5.3 ounces of silver per ton and 6.5 percent lead.

Considering that the block of ground to be tested by the proposed project lies near the Galena mine, it is possible that it contains ore bodies similar to those found at the Galena. A significant discovery of a typical Silver Belt ore body would in itself result in the production of a large amount of lead and copper.

The geology of the project area is shown on plate 3. It will be noted that the dominant structure of this area is the Polaris fault. This is a normal fault which strikes N. 50-70° W. and dips steeply towards the south. In the Galena mine, about a mile east of the project area, the Polaris fault has been correlated with the Shaft fault and its numerous hanging wall branches.

In the western part of the Silver Belt the Polaris fault generally has been considered to be post-mineral in age; however, in the east part of the belt at the Galena mine the relationship is not quite clear. Some evidence in the Galena

mine suggests a pre-mineral age, but post mineral movement along the "B" branch of the fault is evident (see plate 2). The interesting thing, though, is the spacial relationship of the Galena ore bodies to the fault and its principal strands.

The country rock within the block to be explored is considered favorable. Unfortunately, though, we do not know the exact relationship. Where last seen in the Silver Summit 3000 level workings the rocks south of the Polaris fault are bleached and are considered to be a part of the St. Regis formation, but the area south of the fault at depth in the Galena mine is part of the Revett formation. However, both the St. Regis and Revett formations are considered favorable host rocks, and in particular the interbedded quartzites and argillites in the transition zone between the two formations are considered most favorable.

In a report prepared for the company in November, 1958, E. N. Pennebaker, a consulting geologist, recommends the project and points out that a change in strike of the Polaris fault of about 27 degrees may take place between the Rainbow-Triangle area and the Galena mine. He feels that this change in strike and appearance of more quartzitic rocks of the upper Revett formations may be features associated with the mineralization at the Galena mine area.

3. (f) The hanging wall block of the Polaris fault to be explored under the proposed project is considered one of the best remaining target areas along the Page-Galena mineral belt. This block lies near the east end of the belt about a mile west of the Galena mine; and we believe that if any ore bodies are found within it, they may be similar to those at the neighboring Galena mine.

The relationship of ore to the zones of shearing in the hanging wall of the Polaris fault in the Galena mine is most intriguing. Since the area to be explored has a like position with respect to the Polaris fault, it is possible that structural conditions which controlled ore deposition at the Galena could be repeated within this block.

The proposed project is to be carried out on the Silver Summit 3000 level at an elevation about 300 feet below sea level. Near surface workings partially explore the block at elevations ranging from about 2950 to 3200 feet, but no attempt has been made to explore the block between these near surface workings and the Silver Summit 3000 level, a vertical interval of 3250 feet. In this connection it would also be well to point out that several of the ore shoots in the Crescent-Galena section of the mineral belt apex at about sea level, and the -300 foot horizon is considered one of the best on which to conduct exploration in the area. Also, the ore bearing structures at the Galena mine are strong at this horizon.

The country rock expected in the project area is considered among the most favorable host rock in the Coeur d'Alene district.

The presence of vein structures in the tunnels on the Rainbow and Pride of the Rockies claims is considered favorable. These veinings are within the hanging wall block of the Polaris fault. The veining noted in the footwall block of the Polaris fault on the Silver Summit 3000 level is also a favorable indication.

4. (a) OME representatives should contact the Hecla Office at Wallace, Idaho to arrange for any examination. The property lies about 1 mile west of Osburn, Idaho and is readily accessible.
4. (b) There is a Union Pacific rail siding at the mine and the nearest point of supply is Wallace, Idaho about 5 miles east of the mine.
5. (a) The proposed work consists of driving a lateral in the hanging wall block of the Polaris fault, on the Silver Summit 3000 level, with appropriate diamond drill holes to further test this block. Details of this proposed work are shown on Plate 3. The proposed lateral will start from the main Polaris East Lateral at about coordinate 84,835 S - 92,410 E and will be driven easterly for a distance of 3185 feet. We anticipate that some of the first 1000 feet of the lateral will require either timber or rock bolts. This is the area where the many branch faults appear to diverge from the main Polaris fault (see plate 3). Except for short sections which may require either timbering or bolting, most of the rest of the lateral probably will not have to be timbered or bolted. Therefore allowance should be made in the proposed contract for timbering or rock bolting as necessary.

Six crosscuts as shown on plate 3, will be required for diamond drill stations. The two stations for the proposed 1000 foot and 900 foot holes will each be 20 feet long; the three stations for the 200 foot holes will each be 10 feet long. In addition the crosscut at the location of the proposed 750 foot hole will have to be extended 5 feet. Thus 75 feet of crosscutting should be allowed for the diamond drill stations. Some of the drill stations will be used as car transfers, but in addition to these stations, 8 other car transfer stations will be required. These stations will require a slab round about 5 feet deep and 7 feet long, or 315 cubic feet. Thus 2520 cubic feet of slabbing should be allowed for car transfer stations.

The proposed diamond drilling is shown on plates 2 and 3. Two 1000 foot holes, one 900 foot hole, one 750 foot hole and three 200 foot holes are proposed. Thus the proposed drilling totals 4250 feet.

SUMMARY -

Drifting and crosscutting (size 7' x 9' in rock section)

Lateral	3185 feet
Drill stations (6 stations ranging in length from 5 to 20 feet)	<u>75 feet</u>
Total drifting and crosscutting	3260 feet

Slabbing

Car transfer station 8 @ 315 cubic feet each	2520 cubic feet
--	-----------------

Diamond Drilling - (Start with Ax and will drop to Ex only if necessary)

2 - 1000 foot holes	2000 feet
1 - 900 foot hole	900 feet
1 - 750 foot hole	750 feet
3 - 200 foot holes	<u>600 feet</u>
Total Diamond Drilling	4250 feet

5. (b) Not applicable

5. (c) Work will start within 30 days after contract is executed, and should be completed within 15 months from the date of the contract. This time estimate is based on a rate of advance in the lateral of 280 feet per month. We anticipate that by the time the lateral is completed all the drilling except the 1000 foot hole from the lateral face will have been completed. Past experience has shown that on a three shift basis, it is possible to complete a 1000 foot drill hole in a month.

6. Hecla Mining Company has operated continuously in the Coeur d'Alene district for more than 50 years. This project will be done under the direction of well experienced operators, engineers, geologists, superintendents and shift bosses long in the employ of Hecla and its associated operations, and fully capable to efficiently execute the plan of development set out above. Similar projects have been efficiently completed by the same staff men contemplated for this job.

7. Estimate of costs

7. (a) Independent Contracts: The work will not be let to independent contractors. However, our employees will be paid a bonus based on the total footage advanced plus time and one-half over 40 hours worked in one week. The bonus will be earned on the basis of about \$13.00 per foot. This amount is translated to a per day basis, the employee being paid either the earnings based on the bonus or regular day wage, whichever is the greater.

7. (b) Personal services: See Exhibit F

7. (c) Operating materials and supplies: See Exhibits B, C and E

7. (d) Operating Equipment: The operating company, Hecla Mining Company, owns and operates the Silver Summit Mine through which the exploration project will be undertaken on the 3000 level. This mine is completely equipped with all necessary surface and underground facilities. Hecla will furnish all mining equipment to be used on the project. No purchases or rental of equipment are being charged to the project, but maintenance of such equipment will be charged.

7. (e) Initial rehabilitation and repairs: None

7. (f) New buildings, fixtures, installations: None

7. (g) Miscellaneous: See Exhibits B, C, D and E

Exhibit A

HECLA MINING COMPANYPOLARIS MINEExploration of Rainbow and Triangle AreaSummary of Estimated Costs

	<u>Footage</u>	<u>Cost per Foot</u>	<u>Total Estimated Cost</u>
Drifting and crosscutting			
Direct operating costs			
Main lateral	3,185 ft.		
Drill stations	75 ft.		
Total (Exhibit B)	<u>3,260 ft.</u>	\$ 32 12	\$ 104 711 20
Other operating costs			
First four months (Exhibit D)	1,120 ft.	\$ 36 31	\$ 40 667 20
Balance of project (Exhibit C)	2,140 ft.	52 96	113 334 40
Total other operating costs	<u>3,260 ft.</u>	\$ 47 24	\$ 154 001 60
Total drifting and crosscutting	3,260 ft.	\$ 79 36	\$ 258 712 80
Slabbing (Note 1)	2,520 cu. ft.	\$ 1 26	\$ 3 174 40
Diamond drilling (Note 2)			
3,250 ft.	3,250 ft.	\$ 5 40	\$ 17 550 00
1,000 ft.	1,000 ft.	17 31	17 305 00
4,250 ft.	<u>4,250 ft.</u>	\$ 8 20	\$ 34 855 00
Timbering or rockbolting (Note 3)	250 ft.	\$ 11 00	\$ 2 750 00
Total estimated cost of project			<u>\$ 299 492 20</u>

HECLA MINING COMPANY

POLARIS MINE

Notes to Exhibit A

Exploration of Rainbow and Triangle Areas

Note (1) - Cost of 2520 cu. ft. slabbing is calculated as follows:
2520 cu. ft. = equivalent of 40 ft. of drifting and crosscutting, a
7' x 9' opening
40 ft. x \$79.36 = \$3,174.40

\$3,174.40 ÷ 2520 cu. ft. = \$1.26 per cu. ft.

Note (2) - Cost of 4250 ft. of diamond drilling is calculated as follows:
3250 ft. @ \$5.40 per ft. (direct costs only) = \$ 17 550 00
1000 ft. to be drilled after drifting is completed
Direct costs \$5.40 per ft. x 1000
feet = \$ 5 400 00
Indirect costs (Exh E) \$11.91 per ft. x
1000 ft. = 11 905 00 17 305 00
\$ 34 855 00

Note (3) - Timbering or rockbolting as necessary
250 ft. of timbering @ \$11.00 per ft. (maximum) \$ 2 750 00
\$5.00 per rock bolt installed

Exhibit B

HECLA MINING COMPANY

POLARIS MINE

Exploration of Rainbow and Triangle Area

Drifting & Crosscutting

(Analysis of Estimated Direct Cost Per Foot based on 280 Ft. advance per month)

	<u>Average Monthly Cost</u>	<u>Cost Per Foot</u>
Direct labor cost		
Contract - 280' @ \$14.85	\$ 4 158	\$ 14 85
Federal & State payroll taxes (3.1%)	129	46
Workmen's compensation (6.17%)	257	92
Employees Group Insurance (3.67%)	153	55
Retirement Plan Expense (3.33%)	138	49
Vacation Pay (2.61%)	<u>109</u>	<u>39</u>
Total direct labor	\$ 4 944	\$ 17 66
Direct supplies		
Bits & rods	\$ 1 098	\$ 3 92
Drills & drill parts	546	1 95
Explosives	1 408	5 03
Ventilation duct (used material)	420	1 50
Pipe & track (used material)	<u>577</u>	<u>2 06</u>
Total direct supplies	4 049	14 46
Total direct labor & supplies	\$ 8 993	\$ 32 12
Other operating costs	<u>\$14 829</u>	<u>\$ 52 96</u>
Total costs	<u>\$23 822</u>	<u>\$ 85 08</u>

Note: Costs are based on crew working 40 hours per week, 3 shifts per day.

The contract rate per foot is based on a rate of \$13.00 per foot, plus shift differential, holiday time, and time and one-half over 40 hours per week.

Exhibit C

H E C L A M I N I N G C O M P A N Y

P O L A R I S M I N E

Exploration of Rainbow and Triangle Areas

Analysis of Estimated Other Operating Costs - Silver Summit Mine

	Estimated Average Monthly Cost				
	Labor	Supplies & Other	Total	Exclusions	Total
Compressed air	\$ 155	\$ 15	\$ 170	\$	\$ 170
Haulage	1 570	460	2 030		2 030
Hoisting - Main Shaft	1 340	100	1 440		1 440
Pumping	200	70	270		270
Supervision	810		810		810
Ventilation	75	110	185		185
Mine Machinery repairs, etc.	930	500	1 430		1 430
Surface	865	100	965		965
Electric Power		1 300	1 300		1 300
Engineering & Surveying	200	80	280		280
Heating		300	300		300
Insurance		200	200	200 (1)	
Shop & Payroll expense		50	50		50
Taxes - Social Security		345	345	129 (2)	216
- Property		690	690	690 (1)	
Vacation Pay-Wage earners	280		280	109 (2)	171
Watchmen & Fire protection	640		640	640 (1)	
Workmen's Compensation		685	685	257 (2)	428
General expense		1 000	1 000	1 000 (1)	
Mine office	300		300		300
Employees Group Insurance		410	410	153 (2)	257
Retirement Plan Expense		365	365	138 (2)	227
Maintenance of Ventilation Openings	2 000	2 000	4 000		4 000
Total other operating costs	\$ 9 365	\$ 8 780	\$ 18 145	\$ 3 316	\$ 14 829

Cost per foot of drifting and crosscutting at 280' per month \$ 52 96

(1) Excluding general overhead items deemed non-allowable per instructions.

(2) Excluding payroll costs which are included as direct labor charges to project.

Exhibit D

HECLA MINING COMPANY

POLARIS MINE

Exploration of Rainbow and Triangle Areas

Allocation of Other Operating Costs

Note: During the first four months of operations in the Rainbow and Triangle areas, work on the project will be carried on concurrently with operations on the 1750 Level of the Silver Summit Mine. Other operating costs during this 4 months period will be divided as follows:

Other operating costs - Per Exhibit C.		\$ 14 829
Deduct - 3000 Level Haulage costs		
Labor	\$ 1 164	
Supplies	<u>341</u>	1 505
- Maintenance of Ventilation openings		<u>4 000</u>
Total to be allocated		<u>\$ 9 324</u>
Allocation of other operating costs		
1750 Level - Silver Summit Mine - 50%		\$ 4 662
Rainbow and Triangle Areas - 50%	\$ 4 662	
Add - 3000 Level haulage	1 505	
- Mntc. of ventilation openings	<u>4 000</u>	10 167
Total		<u>\$ 14 829</u>

Cost per foot of other operating costs, Rainbow and Triangle Areas

First four months of project \$ 10 167 ÷ 280 ft. = \$ 36 31

Exhibit E

H E C L A M I N I N G C O M P A N Y

P O L A R I S M I N E

Exploration of Rainbow and Triangle Areas

Analysis of Estimated Other Operating Costs - Silver Summit Mine

During the Last 1000 Ft. of Diamond Drilling

	Estimated Average Monthly Cost				
	Labor	Supplies & Other	Total	Exclusions	Total
Compressed Air	\$ 155	\$ 15	\$ 170	\$	\$ 170
Haulage	400	120	520		520
Hoisting - Main Shaft	1 340	100	1 440		1 440
Pumping	200	70	270		270
Supervision	810		810		810
Ventilation	75	110	185		185
Mine Machine repairs, etc.	490	260	750		750
Surface	430	50	480		480
Electric power		1 000	1 000		1 000
Engineering & surveying	200	80	280		280
Heating		300	300		300
Insurance		200	200	200 (1)	
Shop & payroll expense		50	50		50
Taxes - Social Security		220	220		220
- Property		690	690	690 (1)	
Vacation pay - Wage earners	190		190		190
Watchmen & Fire protection	640		640	640 (1)	
Workmen's Compensation		440	440		440
General expense		1 000	1 000	1 000 (1)	
Mine office	300		300		300
Employees Group Insurance		260	260		260
Retirement Plan Expense		240	240		240
Maintenance of ventilation openings	2 000	2 000	4 000		4 000
Total other operating costs	\$ 7 230	\$ 7 205	\$ 14 435	\$ 2 530	\$ 11 905

(1) Excluding general overhead items deemed non-allowable per instructions.

HECLA MINING COMPANYPOLARIS MINEExploration of Rainbow and Triangle AreasMinimum Number of Employees Required to Operate Mine 3 Shifts Per Day

	<u>Number of Employees</u>	<u>Rate Per Shift</u>	<u>Total Per Day</u>
Main crosscut - Motorman	1	\$ 18 74	\$ 18 74
Top hoist - Hoistman	3	20 24	61 92
3000 Level - Motorman	3*	17 54	53 82
Electricians - Foreman	1	22 89	22 89
- Journeyman	1	19 74	19 74
Mechanic	1*	20 24	20 24
Repairman	1*	20 24	20 24
Yard	1	19 74	19 74
Supervision - Mine Supt.	1	37 46	37 46
Maintenance - Ventilation openings			
Hoistman	1	20 24	20 24
Shift boss	1	25 66	25 66
Miners	2	20 24	40 48
			<u>\$ 361 17</u>

*Excluded during last 1000 feet of diamond drilling

MAY 11 1959

Release
This page

Mr. L. J. Randall, President
Hecla Mining Company
Post Office Box 370
Wallace, Idaho

Re: Decret No. 648-6039 (Lead-Zinc-
Copper-antimony)
Hecla Mining Company
Galena Mine
Kainbow & Triangle Areas
Shoshone County, Idaho

Dear Mr. Randall:

Your application for aid in an exploration project and other information available to us in Washington concerning the above-mentioned property have been reviewed.

Careful study of all the information available to us including the results of the previous IMA project, does not indicate that the probability of disclosing significant ore reserves on your property is sufficiently promising to justify Government participation in the proposed exploration. We regret to advise you that, under these circumstances, your application for exploration assistance is denied.

Sincerely yours,

Frank E. Johnson

Acting Director

WPKlugtscheld/or 5-8 & 11-59
Copy to:ocket
Ltr and File
Op. Committee
Mr. Bishop, UBM
Mr. Killgaard, USGS
Region I (2)
Chron.

6039

2905

No. 157 Howard Street
Spokane 6, Washington

April 15, 1959

Memorandum

To: Chairman, Operating Committee, ORE
From: ORE Field Area Region I
Subject: New application (Lead-Zinc-Copper-Antimony)
Polaris Mining Company
Polaris Mine; Rainbow & Triangle Areas
Blaine County, Idaho

Enclosed are the original and two copies of an application for ORE assistance to complete part of the Polaris fault from the 3000 level East Polaris drift which was driven under Contract 140-541, Pocket No. 1224-2079.

The geologic environment of the target area and its proximity to the Polaris fault are similar to the environment and position of the block in which the ore bodies of the Galena mine were found. However, the operator has other prior financial commitments which he states will make it impossible for him to undertake this project at this time without outside assistance. He does not appear to be able to keep open indefinitely the Polaris East 3000 level. Therefore, if the project is not undertaken now it will be much more costly and may become financially unfeasible, according to the operator.

A. E. Weisenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures

cc: ORE (2)

P. S. Also enclosed is one copy each of two leases, one dated August 31, 1953 between Rainbow Mining & Milling Co., Ltd. and Polaris Mining Co., and the other dated June 11, 1950 between Day Mines, Inc., American Smelting & Refining Company and Polaris Mining Co. We made a carbon copy of each for our files.

HECLA MINING COMPANY

P. O. Box 320
WALLACE, IDAHO

April thirteenth
1959

PLEASE REPLY TO:
EXPLORATION DEPARTMENT
HECLA MINING COMPANY
WALLACE, IDAHO

U. S. Dept. of the Interior
Office of Minerals Exploration
S. 157 Howard Street
Spokane 4, Washington

Attention: Mr. A. E. Weissenborn
Executive Officer, OMB
Field Team Region I

Gentlemen:

Submitted herewith are four copies of our application for financial assistance to undertake exploration of a portion of the Rainbow-Triangle Area in the Coeur d'Alene Mining District.

We will appreciate your consideration of this application at your earliest convenience.

Very truly yours,

H. E. Harper
Chief Geologist

HSH:je

Enc.

RECEIVED
APR 14 1959

SPokane, Idaho