DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 1683X

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as

EXPLORATION LOAN

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

To:	COORDINATING COMM.	Date	AUG. 27, 1951
To:	R & R	Date	8/29/51
To:	Code 350 Lend Lease Br.	Date	10-8-51
To:	Supply Division	Date	OCT 11 1951
To:	Reports and Records	Date	OCT 15 1951
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	

DO NOT DETACH

CONTROLLED DOCUMENT

DMA Form 2

DEFENSE MINERALS ADMINISTRATION
Status Change Notice

DMA Docket No. 1683-X

To: Reports and Records Branch
LEAD ZINC BRANCH

From: Earl R. Amundson

Date: JUL 6 1951

The following action has been taken this date on the above Controlled Document.

Forwarded to

Type of request changed to:

Denied ☐ Withdrawn ☐

Approved in amount of $

Other action, specify:

On hand - to be denied

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

OCT 15 1951

Re: DMA-1683
F & A Galena Lode
Custer District
Custer County, S. Dakota
Exploration loan, $20,000
Lead, tungsten

Memorandum

To: Reports and Records Unit
Administrative Management Div.

From: Chief, Lead-Zinc Branch

Subject: Denial of exploration loan

The subject docket was referred to the field for additional information. The field team report has recommended a denial of an exploration loan. Their conclusions are as follows:

1) Before the proposed work of diamond drilling is done, the mine should be unwatered and a survey and geologic map of underground workings should be completed.

2) At the present time, however, the applicants do not have title to claims containing the mine shafts and the vein.

3) The proposed work, because of the lack of clear title (lease or option) to the entire property, is excessive and subject to possible litigation.

4) The applicants have not cooperated to their fullest extent and have been misleading in regard to their title to the property and the work they proposed to do.

I concur with the field team in recommending that this application should be denied.

Returned herewith are:

1 Field team report
4 Forms MF-103

T. P. Billings, Chief
Lead-Zinc Branch

Approved:

Director, Supply Division

FILE COPY
SURNAME: 350

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

OCT 15 1951

Newcomb (ETM)
McKnight
Bishop

Memorandum

Amundson

To: Reports and Records Unit
Administrative Management Div.

From: Chief, Lead-Zinc Branch

Subject: Denial of exploration loan

Re: DMA-1683
F & A Galena Lode
Custer District
Custer County, S. Dakota
Exploration loan, $20,000
Lead, tungsten

A.E.C.

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1 Field team report
4 Forms MF-103

T. P. Billings, Chief
Lead-Zinc Branch

Approved:

Tom Lyon

Director, Supply Division

ELNewcomb:emp G 10-10-51
Copies to: A. B. Needham Region V (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
O. M. Bishop
Administrators file
DMA docket files
Directors r. files 4214 GSA
Br. r. files 4214 GSA

FILE COPY
SURNAME: 350

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

Newcomb (ETM)
McKnight
Bellinger
Bishop

Re: DMA-1683

OCT 15 1951

A.E.C.

Mr. Earl R. Amundson
Mr. W. O. Fillmore
Box 332
Spearfish, South Dakota

Dear Messrs. Amundson and Fillmore:

Your application for an exploration loan on property in Custer County, South Dakota, has been reviewed by the Defense Minerals Administration. We have a field team report which was made on the F and A Galena Lode property at our request. From this information, we conclude that you do not have a clear title (lease or option) to all the property required to accomplish your proposed exploration work. For this reason, we must deny your application for Government assistance.

However, if you obtain a clear title in the near future, we suggest that you reapply and submit a new proposal. Any future proposal should include the unwatering of the mine so that a survey and geologic maps can be made of the underground workings.

We wish to thank you for bringing this property to our attention.

Very truly yours,

Tom Lyon

10/15

Tom Lyon, Director
Supply Division

ELNewcomb:emp
G 10-10-51
Copies to: A. B. Needham Region V (2)
Chief, Lead-Zinc Branch
E. T. McKnight 4204 GSA
O. M. Bishop
Directors r. files 4214 GSA
Br. r. files 4214 GSA
Administrators r.file
DMA docket files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
~~WASHINGTON 25, D.C.~~
2908 Colfax Avenue South
Minneapolis 8, Minnesota
Region V

October 2, 1951

Memorandum

To: Tom Lyon, Chairman, Coordinating Committee - Defense Minerals Administration - Interior Building - Washington 25, D. C.

From: Executive Officer - DMA Field Team, Region V

Subject: DMA Docket 1683-X - Amundson and Fillmore
Box 332
Spearfish, South Dakota

Attached are four copies of the Field Team report on the subject application to explore the F and A Galena Lode for lead.

The application is denied, primarily because the applicants do not have clear title (lease or option) to the portion of the property that is most desirable for exploration. Originally it was intended to explore the mine in general, but because of legal difficulties in obtaining title to do so, exploration was then limited to only an adjacent portion not too feasible.

On the basis of the present application the proposals are not feasible, but should ownership clear up applicants should submit a new proposal and base it on more realistic and reasonable procedure for determining ore.

Returned are the application, supporting data, and review.

Enclosures:

R. B. Needham

OFFICIAL FILE COPY

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 8 1951

To	Init.	Date
210		

4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

C O P Y

Rapid City Field Office
School of Mines Campus
Rapid City, South Dakota

September 27, 1951

Memorandum

To: A. B. Needham, Executive Officer, DMA Field Team, Region V

From: Supervising Engineer, Rapid City Field Office

Subject: DMA Docket 1683X, F and A Galena Lode, E. R. Amundson and W. O. Fillmore

Enclosed are six copies of the examination report on the subject exploration application, together with the application and accompanying papers.

The application has been denied on the basis of ownership and lack of cooperation on the part of the applicants in providing any definite program. It might be interesting to note that a request to Fillmore to provide more definite information than was secured from Amundson did not produce as much as an acknowledgement.

I presume you have in Minneapolis originals of the prints desired. The two copies are for file copies of that report for our office and that of the Survey. The enclosed prints will be returned to the reports from which they came.

/s/ D. H. Mullen
D. H. Mullen

Attachments

cc: Reg.Director, Reg. V
files

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION V

DMA - 1683X

F and A Galena Lode, Custer District

Custer County, South Dakota

Glen Walker, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

September 25, 1951

DEFENSE MINERALS ADMINISTRATION
Report of Field Examination

by

Glen Walker, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

Docket No.: DMA-1683X
Property: F and A Galena Lode
Applicants: W. O. Fillmore, Earl R. Amundson
Commodity: Lead, tungsten

Conclusions and Recommendations

It is recommended that this application be denied. The applicants were requested to furnish specific information regarding the location and depth of the proposed core holes. Amundson called at the Bureau of Mines office, and after considerable insistence, he stated three holes would be drilled from each of eight drill set-ups, making a total of about 5,600 feet. The first drill set-up proposed by Amundson was to be 50 feet east of the shaft. The three remaining set-ups east of the shaft were to be spaced at intervals of 150 feet along the general strike of the vein. At each set-up the holes were to intersect the deposit at 100-, 200-, and 300-foot depths. A procedure identical to that outlined was to be pursued west of the shaft, according to Amundson's statement.

The feasibility of dewatering the mine workings, followed by sampling, geologic examination and surveying to determine ore shoots before core drilling, were pointed out to Amundson. He concurred and stated that had been contemplated, but he was not sure that it would be accepted as part of exploration. He has little conception of the underground status of the property.

Since it is stated in the application that the F and A Galena claim is a relocation of ground contained in the Spokane Lead and Silver claim claimed by the Iron Mountain Development Co., records in the Custer County Court House were examined to determine, if possible, the rightful owner. The records indicate that for the past two years the Iron Mountain Development Co. filed "intention to hold" on all the claims in the Spokane group, including the one in question, which contains the shaft, power house and mill. No record was found of an affidavit that the assessment work had been done on this group by the Iron Mountain Development Co. A "to whom it may concern" is recorded stating that assessment work is in progress on a group of claims, including the F and A Galena, by W. O. Fillmore and Earl Amundson. The record search appeared to be inconclusive in establishing the ownership of the ground in question; therefore, an interview with Fillmore was arranged by one of the field team through the Custer County State's Attorney. In the discussion Fillmore stated he has no intention of including the ground in question in the application for exploration. Questioning of the State's Attorney revealed that in her opinion ownership of the property would have to be established through court action.

Denial of this application is recommended because at present the applicant's right to a part of the property is questionable and the proposed exploration is excessive and haphazard. The field team feels this property is worthy of some exploration, in view of the Lincoln report, but cannot recommend it under the existing circumstances.

Geologic Report

The F and A Galena Lode, formerly the Spokane Silver-Lead Claims, is located at Spokane, Custer County, South Dakota, in secs. 26, 27, 34, and 35, T. 2 S., R. 6 E. It is about 7 miles southeast of Keystone, South Dakota, and is easily accessible by gravel roads.

A visit was made to the mine by the field team, but very little geologic data could be obtained since the mine is filled with water at present and surface outcrops are few. The following brief description is based largely on a filed War Minerals Report, "The Spokane Lead-Zinc Mine" by F. C. Lincoln of the U. S. Bureau of Mines. This War Minerals Report is dated April 1943, and is based mainly on an examination made by Lincoln in 1930 for the Spokane Silver and Lead Company.

The mine was originally located in the late 1800's and was developed in the early 1900's. The most extensive work was carried on in 1927-28 when over 9,000 tons of ore was mined and milled. A fire destroyed the power plant in 1928 and the mine was shut down. The last active work was in 1940 when 81 tons of previously broken ore was shipped to the Helena smelter without previous milling. The penalties were too great and no additional broken ore was shipped.

The mine has been opened by an inclined shaft to the 300-foot level. The attached maps from Lincoln's report show the underground workings. The proposed drift on the 300-foot level was never completed.

The ore deposit is reported to be a fissure vein trending east-southeast and dipping about 72° north-northeast. Measurements on projections of the mine workings indicate that the vein is flattening somewhat with depth.

The country rock is a quartz-mica schist, locally very rich in mica. Surface outcrops indicate that folding is present, but the intensity of the folding, or whether or not the vein is concordant, is not known. Several pegmatites crop out in the area and the vein has cut pegmatite on the 200-foot level.

The principal ore minerals are galena and ferruginous sphalerite, but minor amounts of gold and chalcopyrite are present. Considerable silver was recovered and is presumably associated with the galena. The principal gangue minerals are quartz and pyrite, but some minor arsenopyrite and tourmaline are present. Considerable graphite is also present and apparently indicates the trend of the mineralization.

The vein ranges in thickness from 0.5 feet to over 10 feet. Lincoln reports that three ore shoots are present: a western ore shoot exposed on the surface west of the shaft, a shaft ore shoot located on both sides of the shaft, and an eastern ore shoot that was encountered on the 200- and 250-foot levels. The eastern ore shoot is at least 90 feet long and the shaft ore shoot is about 200 feet long. The length of the western ore shoot is not known.

Reserves and recommendations

Lincoln has computed reserves of ore which are given in the War Minerals Report. These are based on 124 samples, mostly channel, which were taken at the close of active operations in 1930. His figures on reserves and grade of the ore are attractive, and include 4,400 tons of broken ore in the stopes. Lincoln's assays are weighted for sample width but are not weighted for length of influence of each sample or corrected for minimum stoping width. The proper weighting of the samples for

minimum stoping width and for the length of influence of each sample gives values which are considerably lower than those obtained by Lincoln. In addition, the width of the minable ore is considerably less than the figure given by Lincoln. It is impossible to substantiate Lincoln's results and it appears that the shaft ore shoot can be eliminated as possible ore unless the tenor of the ore increases with depth. Also, Lincoln's hypothesis of a western ore shoot is based on one sample and cannot be regarded as proved.

The eastern ore shoot was apparently encountered near its crest. The 200-foot level has an 86-foot length of ore with an average width of 4.5 feet and the following weighted values: 0.027 oz. Au, 1.25 oz. Ag, 2.62 percent Pb, and 0.55 percent Zn. The 250-foot level of this ore shoot has the same length, an average width of 5.4 feet, and values of 0.008 oz. Au, 3.97 oz. Ag, 9.63 percent Pb, and 5.14 percent Zn. A raise from the 200-foot level along this ore shoot apparently goes out of ore at about 30 feet. This richer ore shoot is located where the vein crosses pegmatite and the increase in grade of the ore may be directly related to this feature.

It is not known whether or not the southeast end of the eastern ore shoot was reached in the drift. Samples from near the ends of the drifts on both the 200- and 250-foot levels are still in rich ore.

On the basis of the information in the shaft ore shoot, the application could be denied. The east ore shoot has indications of having sufficient values to warrant exploration for its continuation to the east and at depth. In addition, the possibility of a western ore shoot should be examined.

There are sufficient possibilities for discovery of ore reserves to warrant exploration. It is believed that modern milling developments would be able to treat the ore more efficiently. A 54 percent mill recovery on lead and no recovery on zinc was a contributing factor leading to the abandonment of the mine.

Because of the inaccessibility of the mine workings and the fact that an accurate survey of the mine workings, and hence the vein, is not available (Lincoln's map and the company map differ by 15° - the magnetic declination - and it is impossible to learn which map is correct), it is believed that the following would be the most feasible exploration procedure.

> The mine should be unwatered and a survey and geologic map of the underground workings and vein should be completed. Check samples should then be taken to test Lincoln's sampling. The last phase of the exploration, depending on favorable results of previous work, would consist of diamond drilling the eastern ore shoot to test for extension to the east and at depth, and possible drilling at the anticipated west ore shoot.

It would require approximately 2,000 feet of diamond drilling to check for extension of the ore shoot to the east and at depth to the 450-foot level. This should permit the drilling of approximately 5 holes. These would in no way prove the ore body, but might indicate sufficient extension of the deposit as to warrant rehabilitation of the 100-ton mill and active mining. The spacing of the drill holes would have to await the surveying and sampling of the vein.

Addenda

The most recent discussion with the applicants indicates that they do not have a quit claim title on the claims which include the shaft and much of the vein. Previous discussions with the applicants had given the false impression that the application was to cover the entire mine. The reversal of the applicants' stand apparently resulted from their learning the possible legal complications from their actions.

Since the applicants desire to explore only the adjoining claims and do not have a clear title on the shaft claims, the application should be denied as it now stands. It is too great a risk to diamond drill any of the claims without first doing the above proposed work. It is not known exactly where the vein lies because of the 15° discrepancy in the maps.

It is further recommended that if the applicants obtain a quit claim title on the shaft claims, and can then carry on an exploration proposal similar to the above-outlined proposal, that the applicants be encouraged to re-submit an exploration loan for the entire property.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION V

DMA - 1688X

F and A Calumet Lode, Custer District

Custer County, South Dakota

Glen Walker, Mining Engineer
U. S. Bureau of Mines

J. A. Reddam, Geologist
U. S. Geological Survey

September 25, 1951

DEFENSE MINERALS ADMINISTRATION
Report of Field Examination

by

Glen Walker, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

Docket No.: DMA-16[illegible]X
Property: F and A Galena Lode
Applicants: W. O. Fillmore, Earl R. Ammudsen
Commodity: Lead, tungsten

Conclusions and Recommendations

It is recommended that this application be denied. The applicants were requested to furnish specific information regarding the location and depth of the proposed core holes. Ammudsen called at the Bureau of Mines office, and after considerable insistence, he stated three holes would be drilled from each of eight drill set-ups, making a total of about 5,600 feet. The first drill set-up proposed by Ammudsen was to be 50 feet east of the shaft. The three remaining set-ups east of the shaft were to be spaced at intervals of 150 feet along the general strike of the vein. At each set-up the holes were to intersect the deposit at 100-, 200-, and 300-foot depths. A procedure identical to that outlined was to be pursued west of the shaft, according to Ammudsen's statement.

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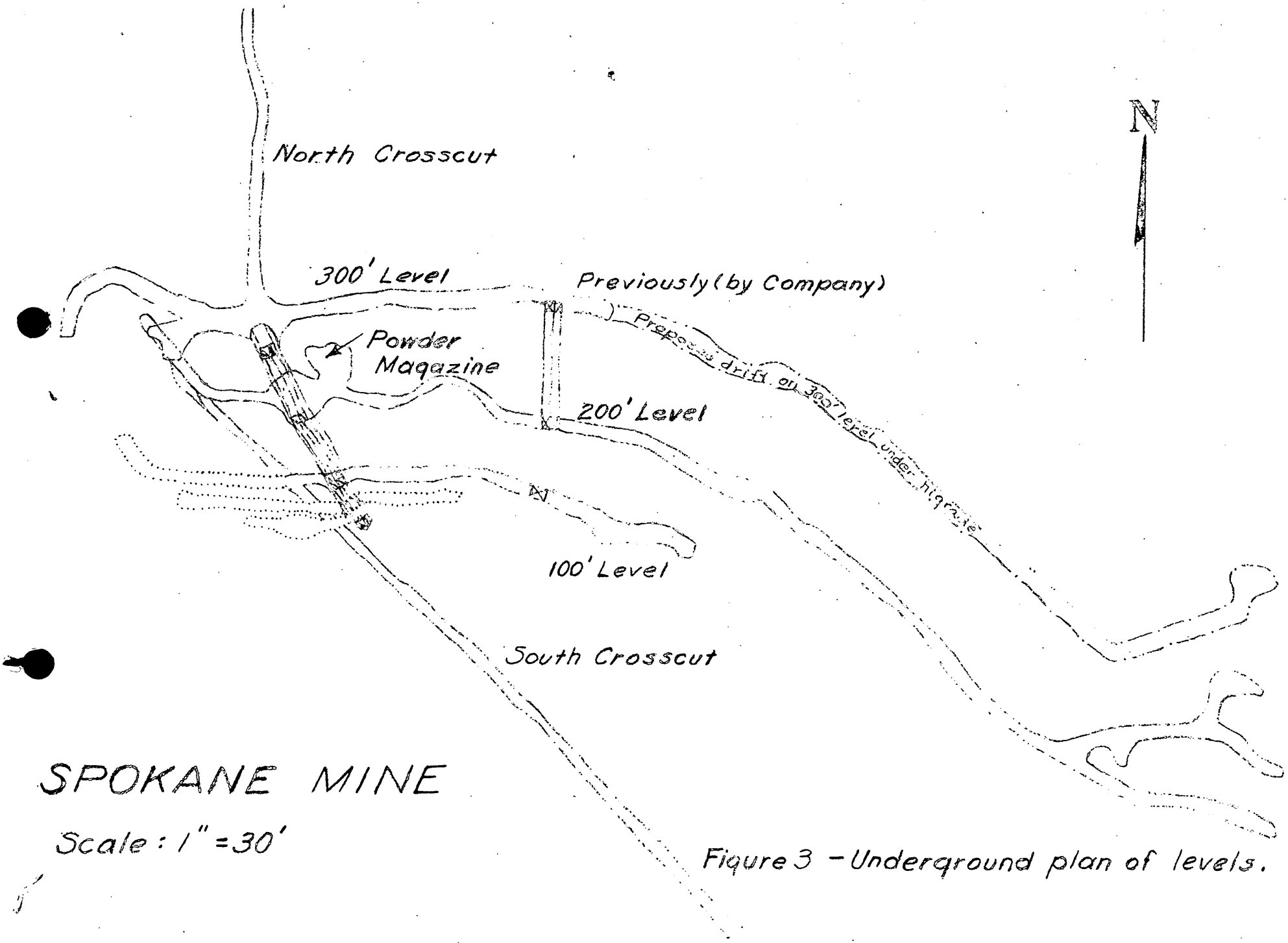


Figure 3 - Underground plan of levels.

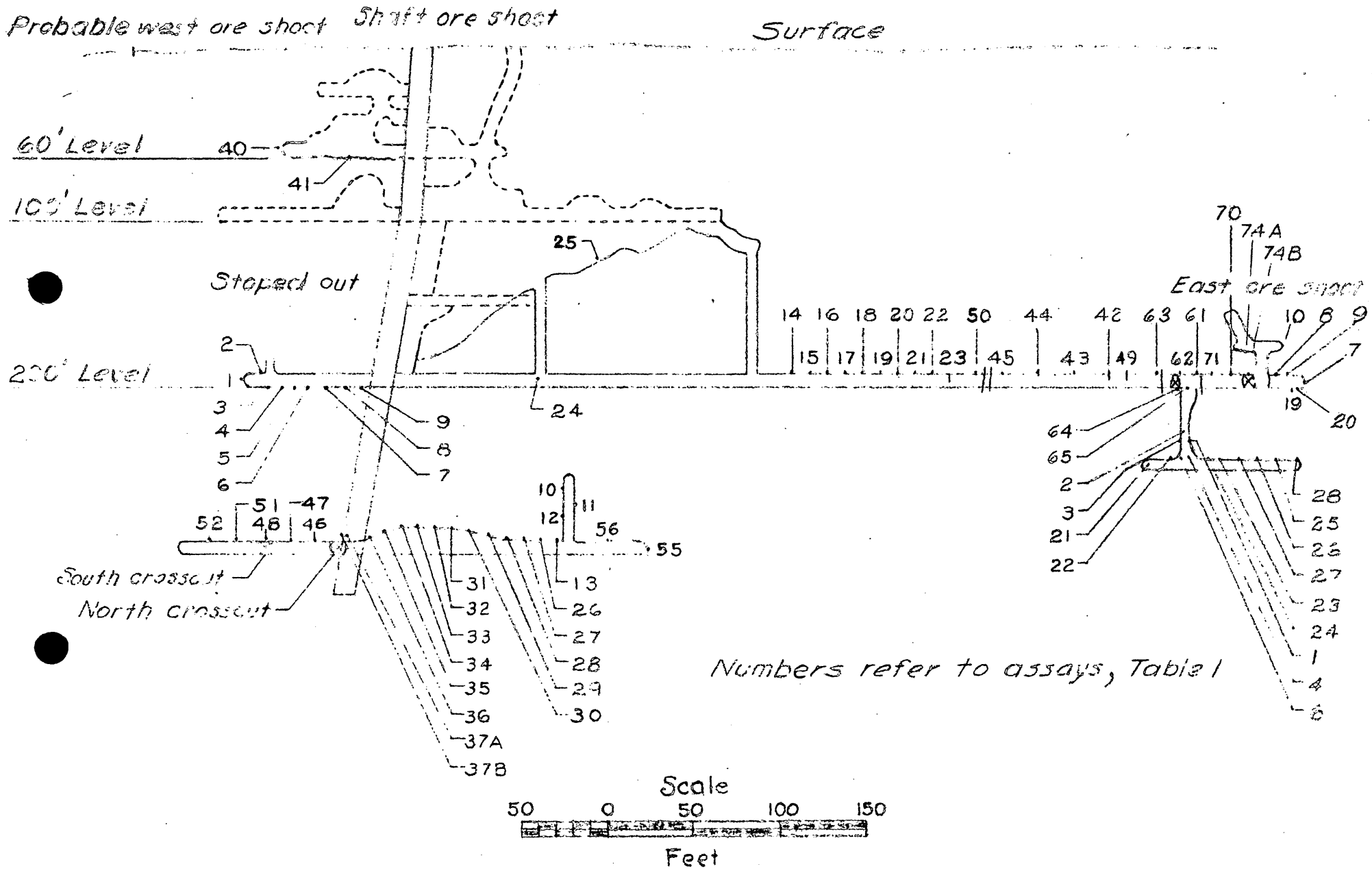


Figure 5 - A[illegible] and elevation map of Spokane Mine

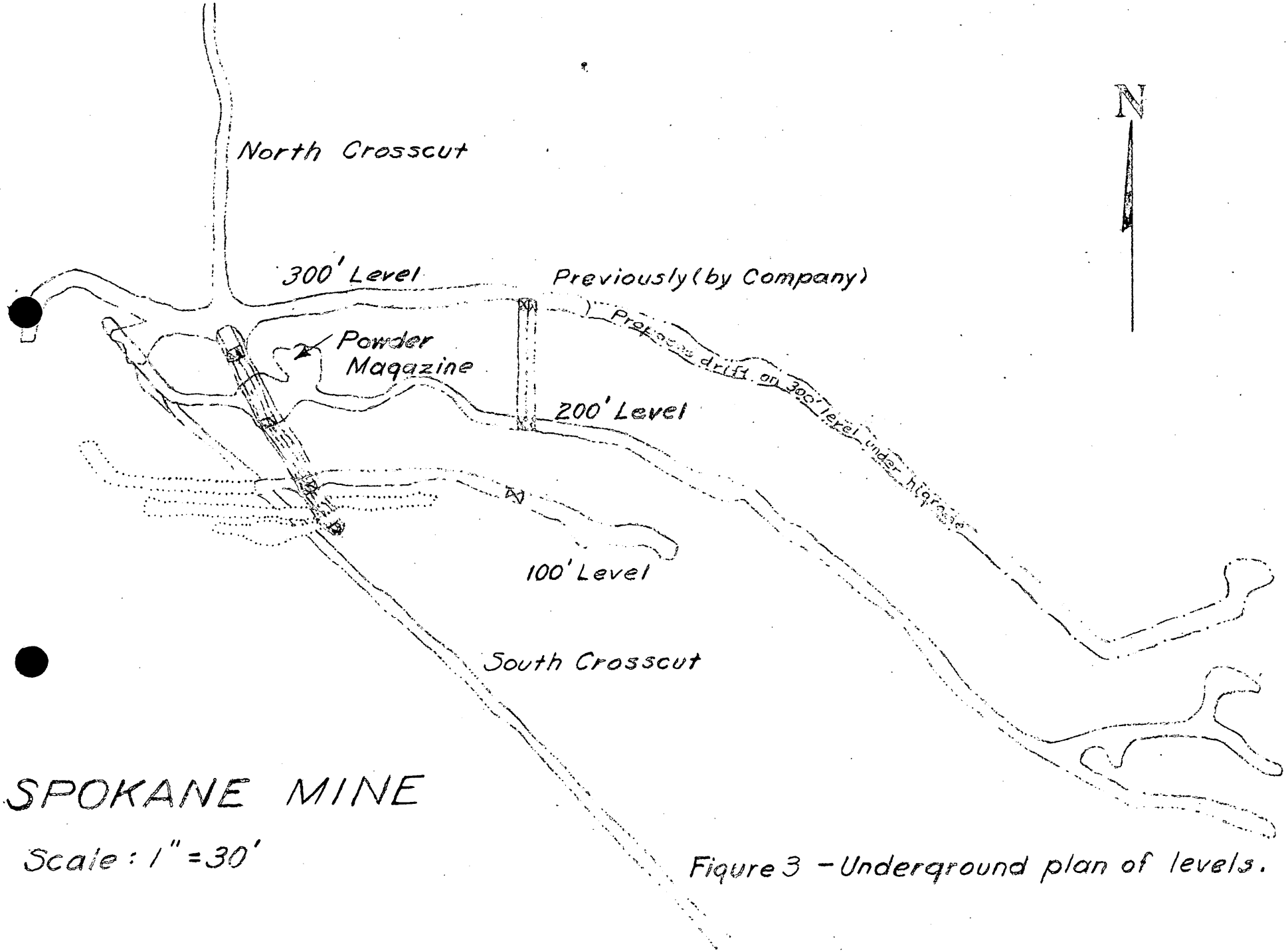


Figure 3 – Underground plan of levels.

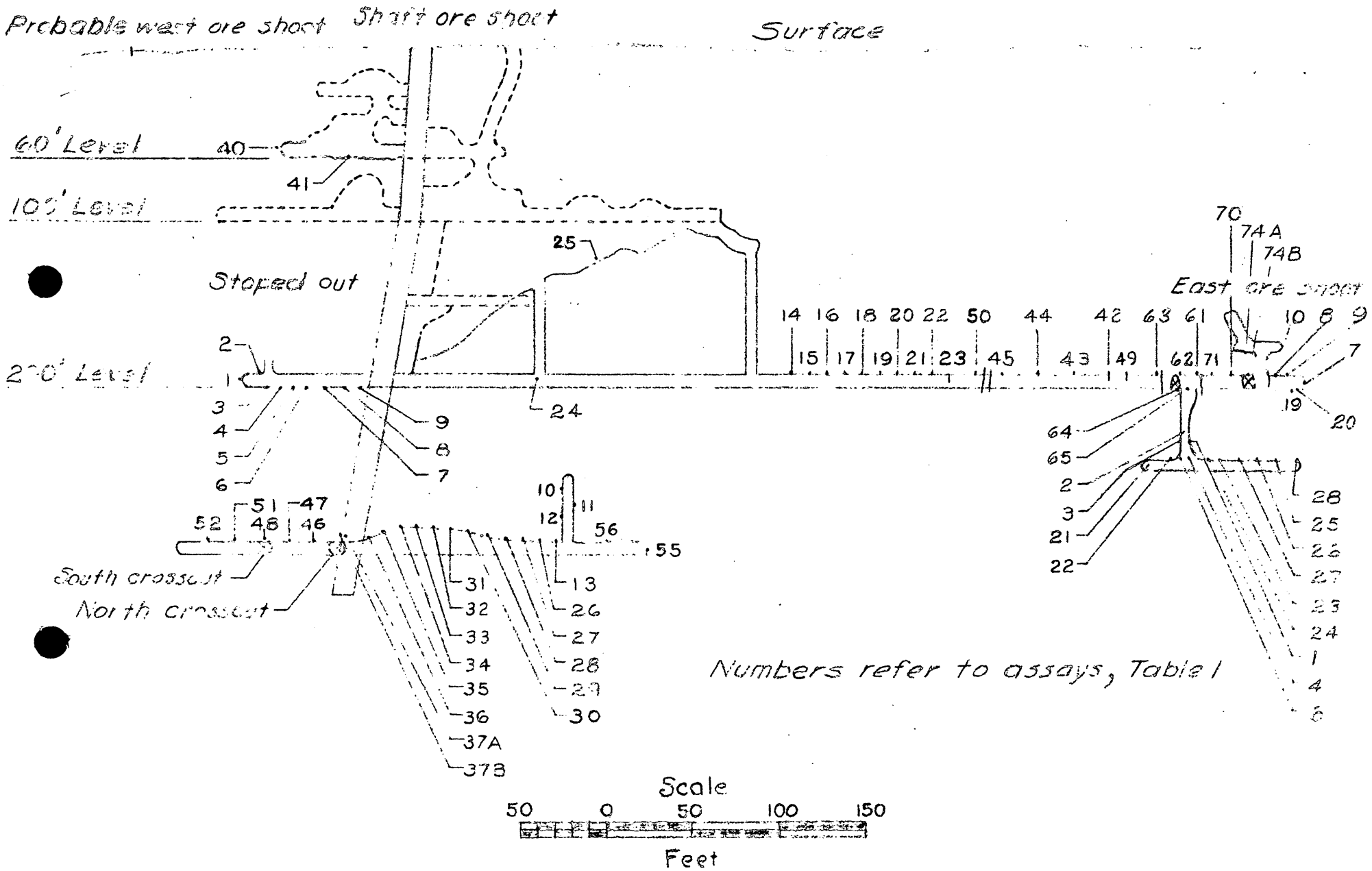


Figure 5 - Assay and elevation map of Spokane Mine

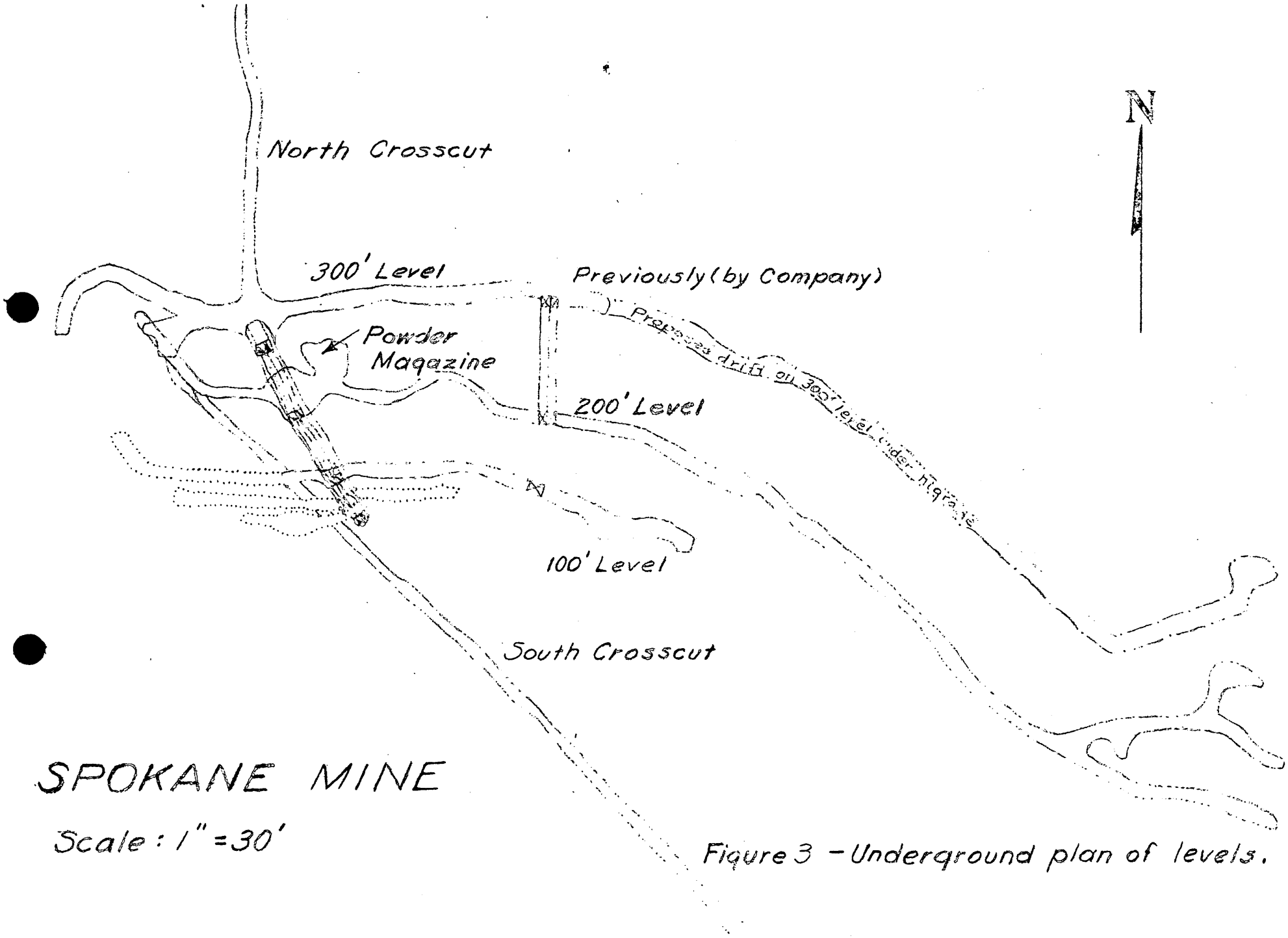


Figure 3 – Underground plan of levels.

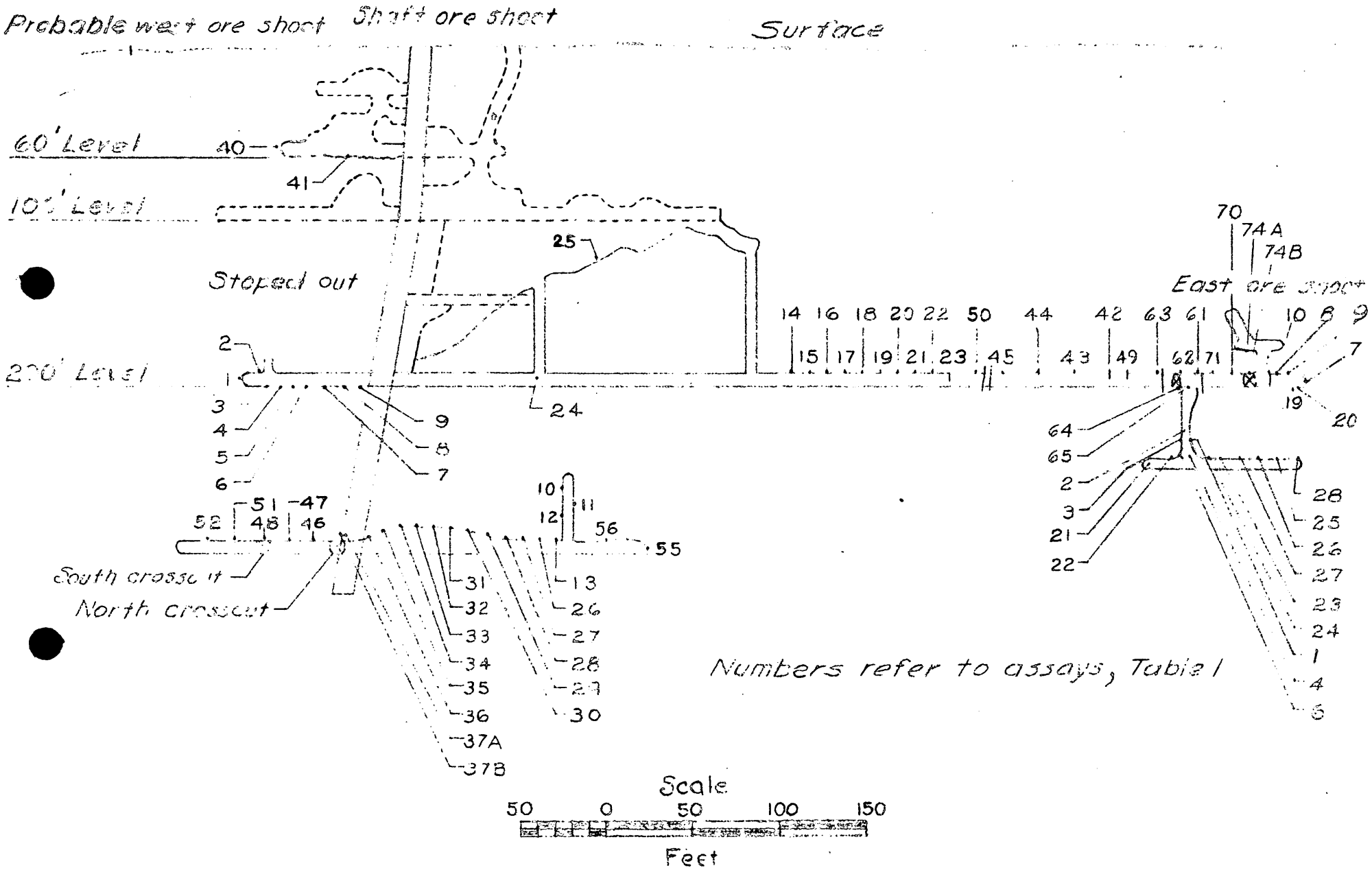


Figure 5 – Assay and elevation map of Spokane Mine

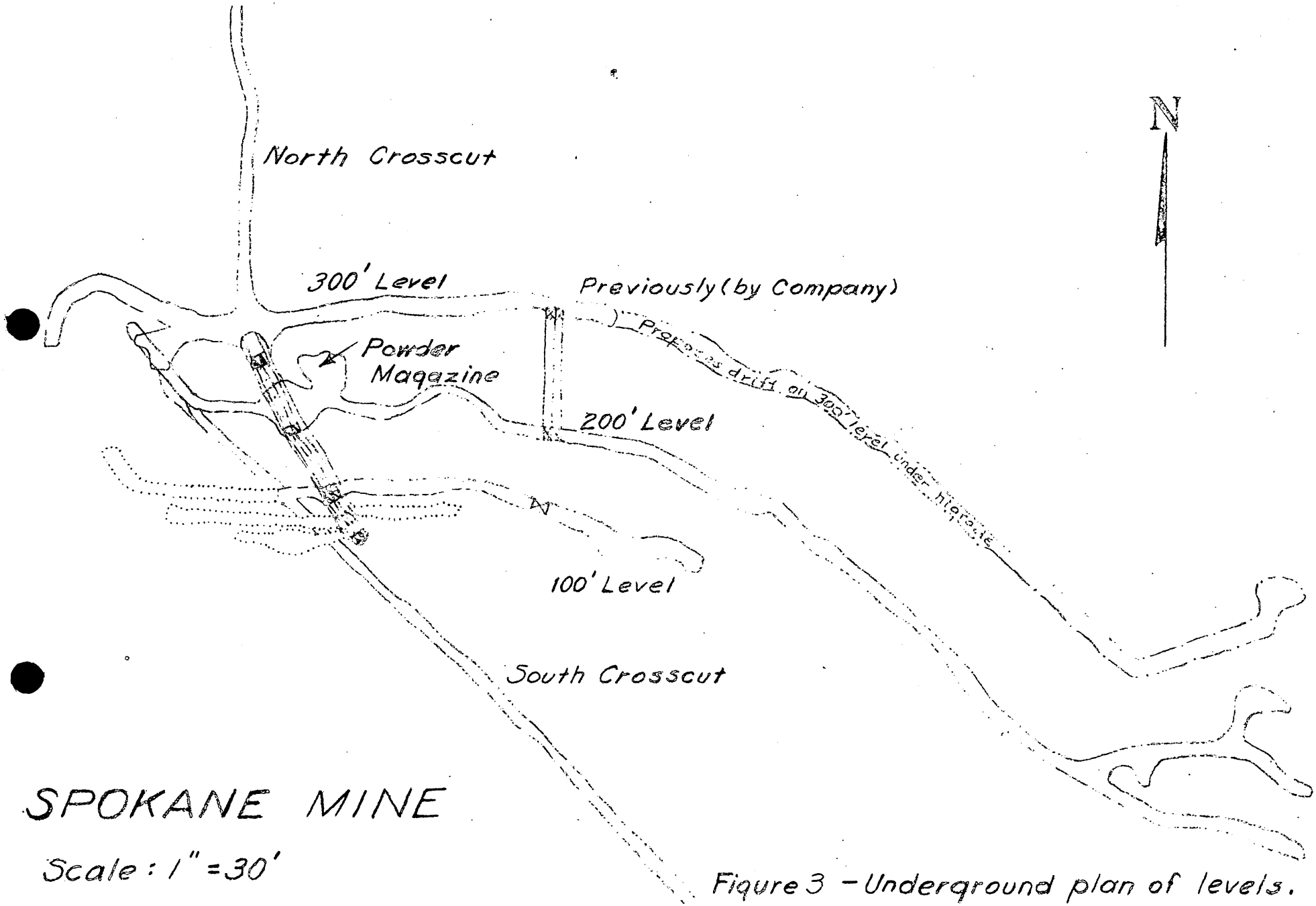


Figure 3 – Underground plan of levels.

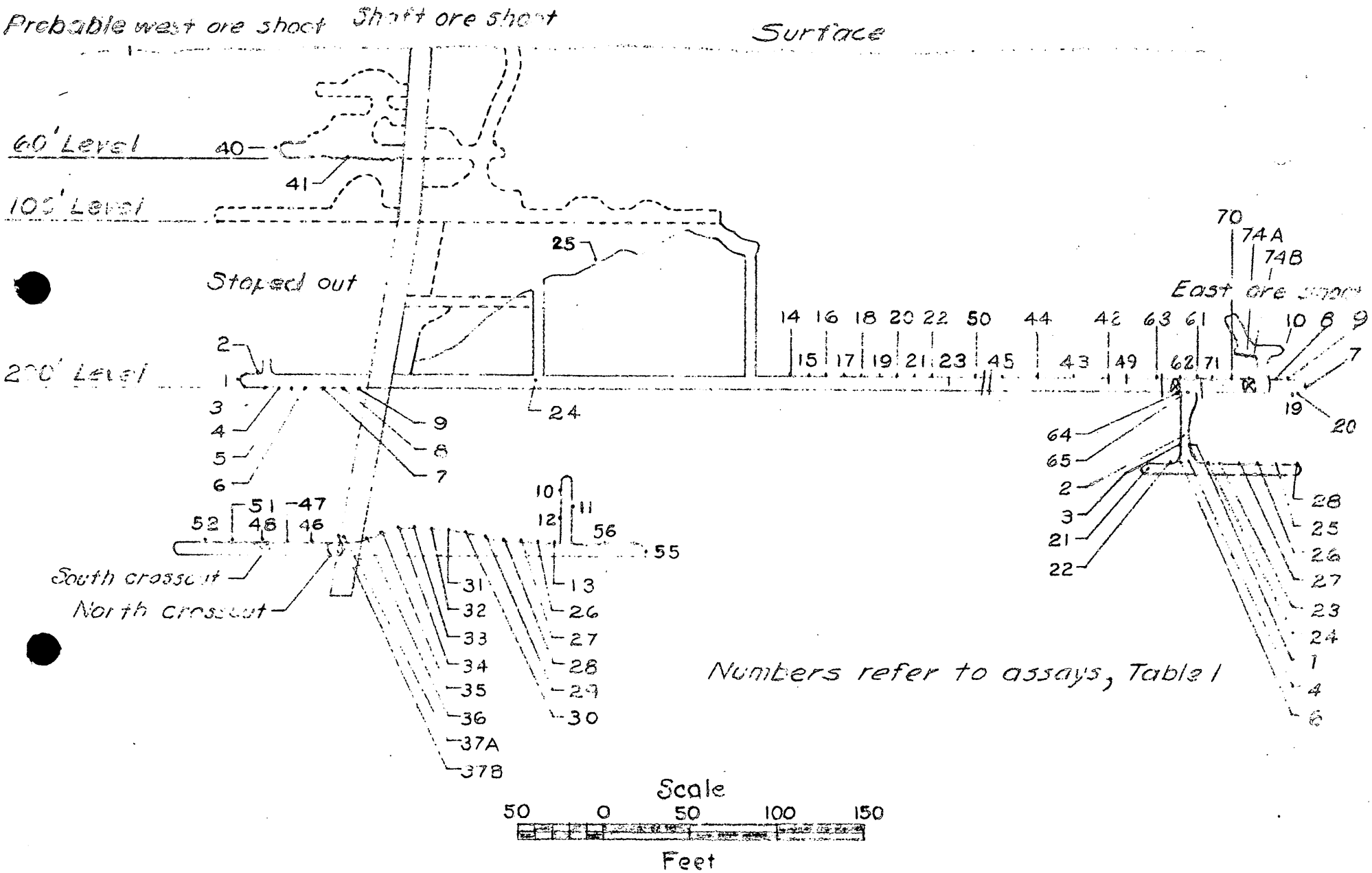


Figure 5 – Assay and elevation map of Spokane Mine

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1683X

Commodity Lead

Total Amount $20,000

Govt. Participation 50%

1. Name and Address of Applicant Earl R. Amundson and W.O. Fillmore, Box 332, Spearfish, South Dakota

2. Location of Property Spokane mine, 4½ miles south of Keystone, S. Dakota

3. Mineral or metal Lead (tungsten?) Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination X

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes - owner
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202 _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Don't know

_____

Is a field check needed on this point? Yes

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

_____

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

_____

_____

_____

Is this part a worthwhile exploration project? _____

d) Are the cost estimates detailed? Only in part

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? Don't know

f) Should more information be requested from applicant? Yes number and depth of holes

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished? _____ If so, attach a draft.

c) Is a field check needed? _____

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Don't know - who furnishes the drill?

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? Don't know

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes

b) Is the schedule adequate for the work proposed? Don't know

c) Is the schedule excessive for the work proposed? Don't know

d) Are the proposed wages and salaries reasonable? Yes, except engineering

e) Is a field check needed? No

14. Exhibit E (question 23-c)*

a) Is it applicable? Don't know

b) Sufficient data?

c) Reasonable?

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Probably

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Main question here is geologic appraisal and collection of reliable past record of underground geologic conditions. Vein only 15 inches wide at surface, but reported to be up to 16 feet wide on 300 foot level, but why has production been nil? J. A. Redden of Geological Survey believed to have some record of conditions in depth. If geologic appraisal is favorable, does the applicant do the drilling, with whose drill, and what is spacing of holes, inclination and footage? Are applicants capable of doing the job?

Reviewed by: E. T. McKnight GS

Date 8-27-51

INT.-DUP. SEC., WASH., D.C. 99009

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma-1683X

Date received 6/13/51

Participation

Earl R. Amundson & W. O. Fillmore
P.O. Box 332, Spearfish, So. Dak.

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 31, 1951

Estimated cost $20,000.00

Mineral or metal Lead Tungsten

Percentage of Government participation 50%

Location of mine Near Keystone, So. Dak.

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Earl R. Amundson & F.O. Fillmore (Name of company) By Earl R. Amundson (Signature of authorized official)

May 31, 1951 (Date) Gen. Mgr. (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

The Applicant

1. A partnership- Earl R. Amundson and W. O. Fillmore, both of Spearfish, South Dakota.

4. Earl R. Amundson, Spearfish, South Dakota, formerly of Deadwood, South Dakota established residence at Deadwood, South Dakota December 1st, 1941. Designed, constructed and managed a 50 ton selective flotation plant treating a complex gold, silver, lead and zinc ore for the Belle Eldridge Gold Mines, Deadwood, South Dakota. This operation was a success both metallurgically and economically during the period of my management 1½ years. I have C.P.A. Audits to substantiate this statement. With the exception of a short period of time(greater part of year 1945 spent in the employ of Western Electric Company, Passiac, N.J. designing engineer) I have been engaged in mining and metallurgical work in the Black Hills of South Dakota.

W. O. Fillmore of Spearfish, South Dakota has been engaged in mining and lumbering operations in the Black Hills for the past 18 years.

5. We are the owners of the property. We acquired by purchase the Yakima, Yakima No. 1, Gay, and Keola Lodes. No encoumberance on this group of claims. We acquired by purchase the Dewey and Dewey No. 1 Lodes. We hold a quit claim deed to the Dewey claims. We agreed by contract with the former owner Richard W. Meiners of Hermosa, South Dakota to pay the sum of $2,100.00 on or before June 1, 1952 if by exploration, sufficient ore is discovered on the Dewey properties to warrant economic development of same. If insufficient ore is not discovered on the Dewey properties we do not have to pay the sum of $2,100.00. In such case we agreed to return the deed to Richard W. Meiners, remove our equipment and the contract is thereby terminated. Their being no responsibility or obligation by either party if insufficient ore in the unanimous opinions of Earl R. Amundson and W. O. Fillmore

is not found. The F and A Galena Lode was acquired by re-location on May 23, 1951 by Earl R. Amundson and W. O. Fillmore of an abandoned claim. This was formerly the Spokane Lead and Silver Lode. This mine was opened in the early days and high grade lead and silver ore was mined, sorted and shipped to smelters. The South Dakota School of Mines Bulletin No. 16 Published in May 1929 pages 183-185 states the following.

ORES OF PRE-CAMBRIAN AGE

SPOKANE DISTRICT. The Spokane mining camp is located about 4½ miles southeast of Keystone. The area is one of Algonkian schist and slates, partly surrounded by the Harney Peak pegmatitic granite. The ore body is a well defined vein striking northwest and southeast, with a dip of about 82° to the southwest. The vein varies considerable in width from place to place. It is about fifteen inches wide at the surface and widens to six to ten feet on the 200 foot level. It is reported to be sixteen feet wide at a maximum on the 300 foot level, but we did not get an opportunity to see that level before the mine closed down. The vein is essentially conformable with the enclosing schist walls. In the immediate vicinity of the vein the slate wall has been altered to a highly micaceous schist consisting dominately of muscovite, subordinately of biotite and quartz, and an appreciable amount of arsenopyrite and pyrite. This mica schist wall rock is quite coarse for rock of this type, the muscovite flakes averaging two to three millimeters in longest diameter, and some of them reach a diameter of one centimeter. Apatite is present in prisms of microscopic size. No tourmaline was found.

In the vein itself quartz is the principal gangue mineral, but small amounts of muscovite, and occasional coarse crystals of microcline feldspar occur. The metallic minerals of the vein are pyrite, sphalerite, galena, and minute amounts of chalcopyrite. No arseno-

pyrite could be detected by microscopic examination of the ore, and analyses of the ore show only about .05 % arsenic. This is suprising in view of the rather abundant arsenopyrite disseminated in the wall rock close to the vein. Argentite has been reported[1] from this vein, but we have been unable to detect this or any other silver mineral by microscopic examination of many sections of the ore.

Polished sections of the ore show the following sequence of deposition: first, an early pyrite, deposited in sub-iromorphic crystalline grains; second, sphalerite and galena, essentially contemporaneous with each other, as they exhibit the "mutualboundary" relationships, but with galena in part later with sphalerite as though its period of deposition continued slightly longer than that of sphalerite; chalcopyrite following the sphalerite-galena period, cutting the sphalerite in veinlets and also occuring as minute blebs in the zinc blend without relation to crystallographic directions in the latter; finally, a second generation pyrite, occuring in minute quartz veins cutting galena along cleavage plakes and cutting sphalerite in an irregular manner. This later pyrite also occurs in irregular, somewhat vermicular areas in the sections, intergrown with quartz. It has a very distinctive, somewhat "mushy" appearance under the microscope. It has not only cut the earlier minerals of the ore, but apparently has replaced in part the earlier pyrite, changing it from solid, crystalline material to the "mushy" material characteristic of this late generation pyrite. Quartz seems to have been deposited all through the mineralization period, as sections show rounded, corrowed grains of early quartz and also veinlets

[1] Ziegler, Victor. Minerals of the Black Hills. S.D. State School of Mines, Bull. No. 10, p. 61, 1914.

of late quartz cutting all the earlier minerals.

The silver of the ore probably occurs principally in isomorphous mixture or solid solution with the galena, and less importantly associated with the sphalerite. As stated above, no definite silver minerals have been detected. The ratio of silver to lead varies considerably. A number of assays made by Charles Bentley show a variation in the ratio from .33 oz. silver per ton for each percent of lead to .82 oz. An average of ten assays of average grade ore and mill heads shows about one half ounce of silver for each percent of lead. In the mill, concentration of lead and silver has been efected by differential flotation, eliminating sphalerite, pyrite, and gangue. In these concentrates the Ag-Pb ratio drops and is fairly constant at about .35 oz. silver for each percent of lead. In the mill, it is evident that part of the silver-bearing mineral is not floated, and the probabilities are that the sphalerite is somewhat argentiferous. Unfortunately the zinc product from the flotation units has bee n discarded, and we have been unable to obtain any assays of that.

From the close positional relationship of this vein with the pegmatite granite, its occurrence in the pre-Cambrian rocks, and its mineralogical relationships, the deposit probably falls in the high temperature lead-silver-zinc group of Lindgren.

Production figures from the Spokane mine are not available, but as yet there has been no very important output. The mine has been developed by an incline shaft to the 300 foot level, with drifts and cross-cuts on the 60, 100, 200, and 300 levels. Some stoping has been done on the 200 level and above. Early in 1928 the power house of the company burned, and the mine has been idle since.

8. No joint financial statement is available as we are the co-owners of the property, and not partners in a partnership business. However we have operated jointly in the past on similar ventures, in harmony and to a successful conclusion.

9. $10,000.00

10. F and A Galena Lode, Yakima, Yakima No. 1, Gay Lode, Dewey Lode, Dewey No. 1 and Keola Lodes all adjoining are located in sections 26, 27, and 35, T 2S, R6E of B.H.M. Custer County, Black Hills of South Dakota.

11. Present and past claim names the same with the exception of the F and A Galena Lode which was formerly Spokane Lead and Silver Lode.

12. The property is located about four and a half miles south of Keystone, South Dakota. The C. B. & Q. RR have adequate shipping facilities at Keystone, South Dakota. The Consolidated Feldspar grinding mill and other plants located there daily ship many carloads of ore and finished products. U. S. highway 16 is the west boundary of the Keola Lode. The roads to the mine are excellent and are in use the year round.

13. A small creek flows the Yakima Lodes. It supplies sufficient water to operate a fair sized milling plant. Electric power is available less than one half mile distant. Rates slightly over one cent per KWH.

14. A 20' x20' frame shed on the Keola Claim is suitable for the storage of equipment and supplies. The residence of Richard W. Meiners on the west boundary of the property is used to board and house our workmen.

15. Ore and concentrates would be hauled by truck 6 miles to Keystone, and shipped via. C. B. & Q. RR to A.S. & R. smelter at Leadville, Colorado, distance approximately 475 miles.

16. Mine was opened in the late 1800's. High grade lead, up to 80% and 70 ounce per ton silver ore was shipped to the smelters. A large mill of very poor design was constructed in the 1920's. From the appearance of the flotation cells and filter and other machinery installed in the mill it is assumed that the plant was only in operation for a short period of time. Good grade ore is stacked near the shaft (I have many lumps of solid galena ten inches in diameter hand picked from the ore piled at the surface.) Old residents, living near the property state that poor management and low metal prices are the reasons for the shut-down.

17. No production reports are available in this area. Neither do the former eastern owners have them.

18. Considerable ore is contained in the dumps that could be milled at a profit. A School of Mines professor told Mr. Fillmore several years ago that $25,000.00 worth of ore lies broken in the stopes (this would be $50,000.00 at todays market prices.

18. Ore or mineralized reserves unknown as the lower levels are under water. Ore was mined to the 300 foot level in the early days. The vein is well defined. It is about fifteen inches wide at the surface and widens to sixteen feet at the 300 foot level. The deposit has been classified as high temperature and probably goes down to considerable depth.

19. A shaft put down 100 feet on the Dewey claim 60 years ago by the father of Mr. Richard W. Meiners, the former owner is reported to have intercepted a heavy dark mineral which was unknown at that time but which now is thought to be wolframite.

A surface deposit of wolframite was opened up less than one half mile north of this shaft during the latter part of World War II . Approximately $600.00 of high grade specimens (one ton) were taken from the mine at a time when the tungsten market was low. The mine

was not developed beyond the prospect stage. Indications are that the deposit strikes in the vicinity of the fore mentioned 100 foot shaft. We contemplate exploration of this area for tungsten at a later date.

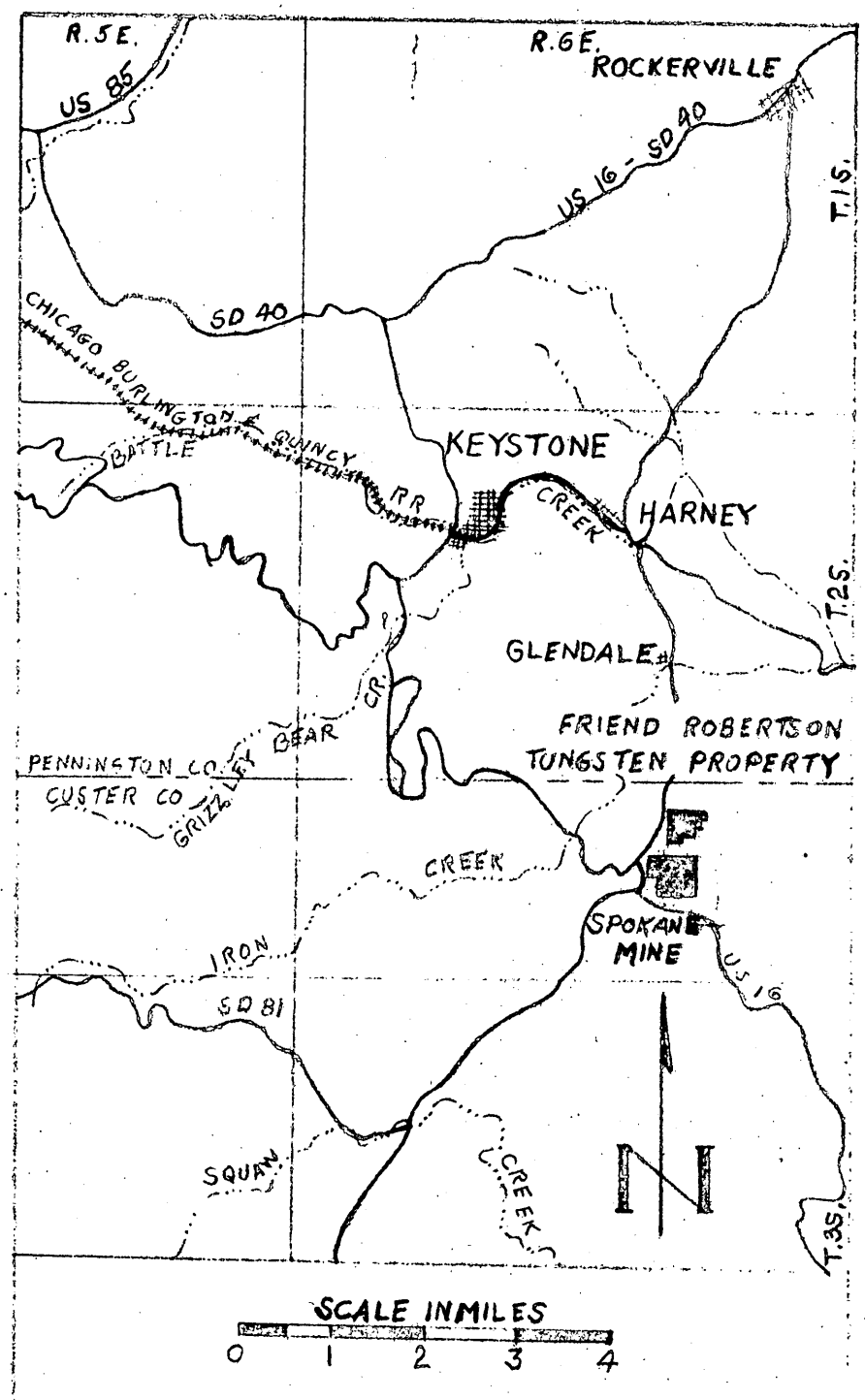
20. Lead at the present. Possibly tungsten at a later date after more geological information is compiled.

21/ Proposed exploration program is to determine the extent of the lead-zinc vein in length and depth, starting at both ends of the present drifts. We propose to drill a series of diamond drill holes along the strike of vein from the surface of the ground. The time required to complete the program would be approximately six months from starting date.

22. In view of the fact that a sizable body of lead-silver-zinc ore has been opened up to the 300 feet level and drifts run for several hundred feet on the vein and that the ore bodies at the lower levels are wider and more mineralized than the upper levels, indicates that further exploration both in depth and on the strike of the vein is justified.

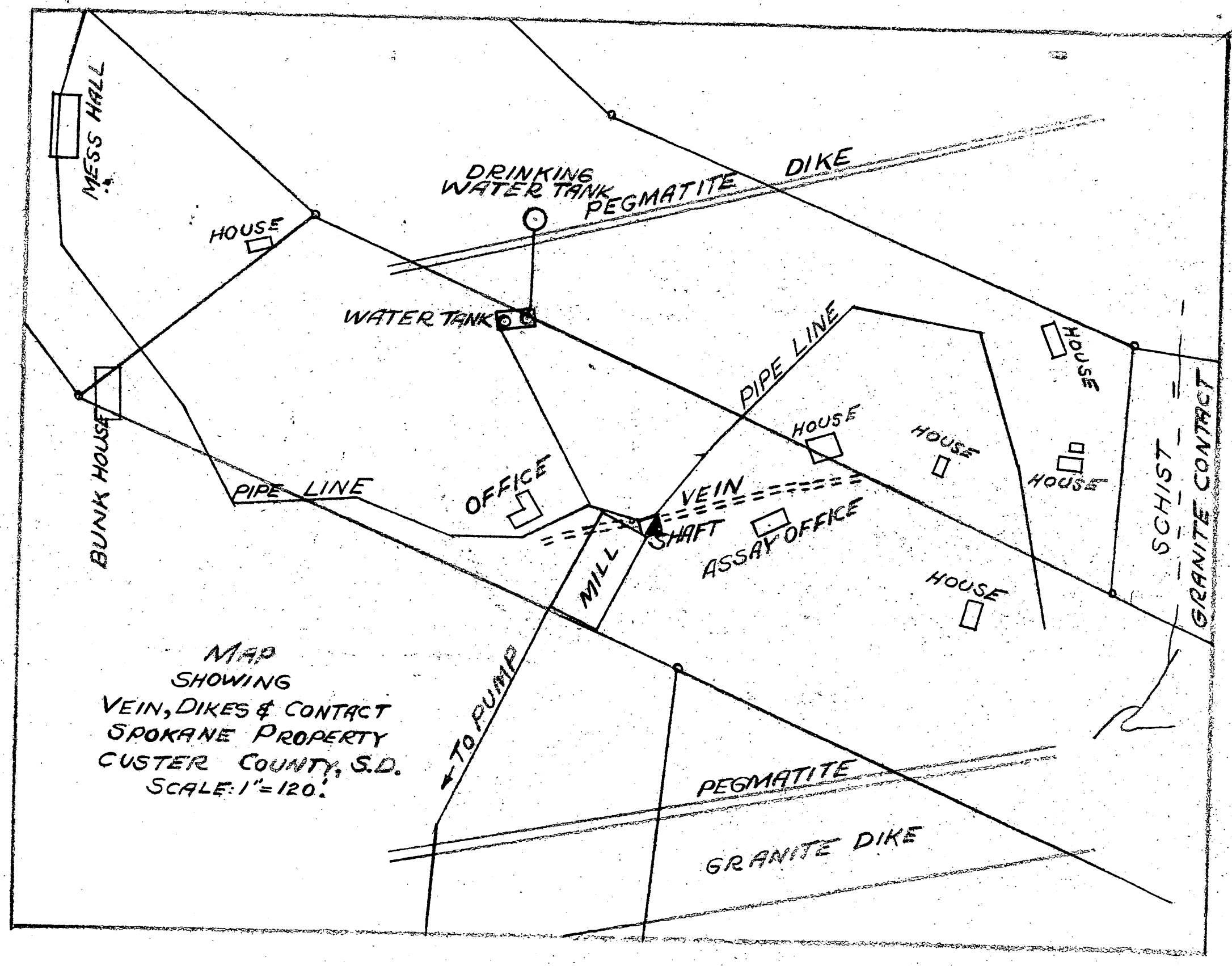
23. Labor 4 men at $65.20 per week, 26 weeks	$5740.80
1 Foreman at $100.00 " " " "	2600.00
Engineering	3900.00
Supplies-consisting of gasoline, oil, diamond drill bits, explosives, etc.	4000.00
Repairs, insurance, incidentals.	3759.20
	$20,000.00

24. Time Schedule- We propose to start exploration at an early date and continue thru to the completion of the program.

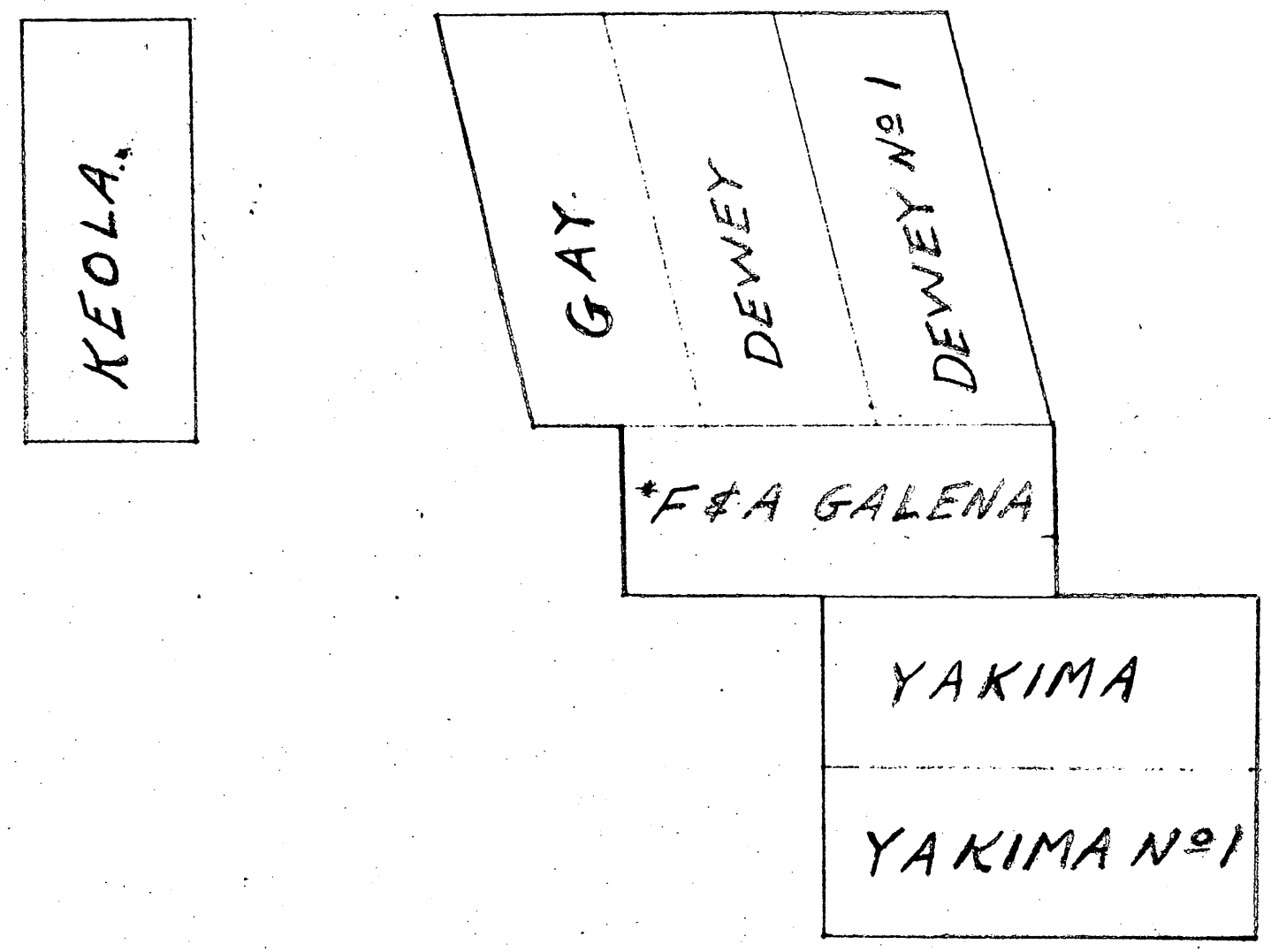


LOCATION MAP OF
SPOKANE LEAD AND SILVER MINE

Dma - 1683 X



MAP
SHOWING
VEIN, DIKES & CONTACT
SPOKANE PROPERTY
CUSTER COUNTY, S.D.
SCALE: 1" = 120'



Tentative Map of Property May 24, 1951. Property lines are being surveyed at this time. Maps will be prepared at an early date. Property located in Sections 26, 27, & 35 T2S, R6E. B.H.M. Custer County, S.D.

* Formerly Spokane Lead & Silver.

scale 1" = 600'

FILE COPY
SURNAME:

350

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

McKenzie
McKnight
(Eff. 1 mo)
Johnson
Thayer
Merrell

Re: Docket DMA-1683X

AUG 29 1951

a R.C.

Messrs. Earl R. Amundson and
W. O. Fillmore
Box 332
Spearfish, South Dakota

Gentlemen:

Your application (Docket 1683X) for an exploration lean has been reviewed by the Lead-Zinc Branch of the Defense Minerals Administration. Before final decision can be taken on your request it will be necessary to obtain additional information on your property. Your application, therefore, has been referred to Mr. A. B. Needham, Executive Officer, DMA Field Team, 2908 Colfax Avenue, South, Minneapolis 8, Minnesota, for further information and advice.

Very truly yours,

SIGNED 8/29 cc

Tom Lyon, Director
Supply Division

ETMcKnight:emp
G 8-27-51
Copies to: A. B. Needham Region V (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

4

Re: Docket DMA-1683X

AUG 29 1951

Messrs. Earl R. Amundson and
R. W. Fillmore
Box 332
Spearfish, South Dakota

Gentlemen:

Your application (Docket 1683X) for an exploration loan has been reviewed by the Lead-Zinc Branch of the Defense Minerals Administration. Before final decision can be taken on your request it will be necessary to obtain additional information on your property. Your application, therefore, has been referred to Mr. A. S. Needham, Executive Officer, DMA Field Team, 2305 Colfax Avenue, South, Minneapolis 3, Minnesota, for further information and advice.

Very truly yours,

Tom Lyon, Director
Supply Division

A.McKnight:emp
O 8-27-51
Copies to: A. S. Needham Region V (2)
Chief, Lead-Zinc Br.
A. T. McKnight 4204 GSA
R. H. Hore
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

McKnight
Mentch
(for no ...)
J. Johnson

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

AUG 29 1951

Mr. A. B. Needham
Executive Officer, DMA Field Team
Region V
2908 Colfax Avenue, South
Minneapolis 8, Minnesota

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 1683X

Commodity Lead

Applicant ~~Earl R. Amundson and W. O. Fillmore, Box 332~~
Spearfish, South Dakota

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1683X

Commodity Lead

Total Amount $20,000

Govt. Participation 50%

1. Name and Address of Applicant Earl R. Amundson and W.O. Fillmore, Box 332, Spearfish, South Dakota

2. Location of Property Spokane mine, 4½ miles south of Keystone, S. Dakota

3. Mineral or metal Lead (tungsten?) Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination X

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes - owner
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future

productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202 _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Don't know

Is a field check needed on this point? Yes

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Only in part

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? Don't know

f) Should more information be requested from applicant? Yes number and depth of holes

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed?_____

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Don't know - who furnishes the drill?

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? Don't know

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes

b) Is the schedule adequate for the work proposed? Don't know

c) Is the schedule excessive for the work proposed? Don't know

d) Are the proposed wages and salaries reasonable? Yes, except engineering

e) Is a field check needed? No

14. Exhibit E (question 23-c)*

a) Is it applicable? Don't know

b) Sufficient data?

c) Reasonable?

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Probably

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Main question here is geologic appraisal and collection of reliable past record of underground geologic conditions. Vein only 15 inches wide at surface, but reported to be up to 16 feet wide on 300 foot level, but why has production been nil? J. A. Redden of Geological Survey believed to have some record of conditions in depth. If geologic appraisal is favorable, does the applicant do the drilling, with whose drill, and what is spacing of holes, inclination and footage? Are applicants capable of doing the job?

Reviewed by: E. T. McKnight GS

Date 8-27-51

INT.-DUP. SEC., WASH., D.C. 99009

FILE COPY
SURNAME:

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

June 20, 1951

Mr. Earl R. Amundson
P. O. Box 332
Spearfish, South Dakota

Subject: DMA-1683X
Re: Exploration loan
F. and A. Galena Lode
Yakima, Yakima No. 1,
Gay Lode, Dewey Lode,
Dewey No. 1 and keela
lodes.

My dear Mr. Amundson:

Receipt is acknowledged of your application and attachments of May 31, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1683X and was referred to Mr. Otto Herres, Chief, Lead-Zinc Branch on June 15, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1683X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:Jeb
cc: Strobel-2
Files
Herres
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1683X

Date received 6/13/51

Participation

Earl R. Amundson & W. O. Fillmore
P.O. Box 332, Spearfish, So. Dak.

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 31. 1951

Estimated cost $20,000.00

Mineral or metal Lead Tungsten

Percentage of Government participation 50%

Location of mine Near Keystone, So. Dak.

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Earl R. Amundson & W.O. Fillmore
(Name of company)

By Earl R. Amundson
(Signature of authorized official)

May 31, 1951
(Date)

Gen. Mgr.
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

The Applicant

1. A partnership- Earl R. Amundson and W. O. Fillmore, both of Spearfish, South Dakota.

4. Earl R. Amundson, Spearfish, South Dakota, formerly of Deadwood, South Dakota established residence at Deadwood, South Dakota December 1st, 1941. Designed, constructed and managed a 50 ton selective flotation plant treating a complex gold, silver, lead and zinc ore for the Belle Eldridge Gold Mines, Deadwood, South Dakota. This operation was a success both metallurgically and economically during the period of my management 1½ years. I have C.P.A. Audits to substantiate this statement. With the exception of a short period of time(greater part of year 1945 spent in the employ of Western Electric Company, Passiac, N.J. designing engineer) I have been engaged in mining and metallurgical work in the Black Hills of South Dakota.

W. O. Fillmore of Spearfish, South Dakota has been engaged in mining and lumbering operations in the Black Hills for the past 18 years.

5. We are the owners of the property. We acquired by purchase the Yakima, Yakima No. 1, Gay, and Keola Lodes. No encoumberance on this group of claims. We acquired by purchase the Dewey and Dewey No. 1 Lodes. We hold a quit claim deed to the Dewey claims. We agreed by contract with the former owner Richard W. Heiners of Hermosa, South Dakota to pay the sum of $2,100.00 on or before June 1, 1952 if by exploration, sufficient ore is discovered on the Dewey properties to warrant economic development of same. If insufficient ore is not discovered on the Dewey properties we do not have to pay the sum of $2,100.00. In such case we agreed to return the deed to Richard W. Heiners, remove our equipment and the contract is thereby terminated. Their being no responsibility or obligation by either party if insufficient ore in the unanimous opinions of Earl R. Amundson and W. O. Fillmore

is not found. The F and A Galena Lode was acquired by re-location on May 28, 1951 by Earl R. Amundson and W. O. Fillmore of an abandoned claim. This was formerly the Spokane Lead and Silver Lode. This mine was opened in the early days and high grade lead and silver ore was mined, sorted and shipped to smelters. The South Dakota School of Mines Bulletin No. 16 Published in May 1929 pages 183-185 states the following.

ORES OF PRE-CAMBRIAN AGE

SPOKANE DISTRICT. The Spokane mining camp is located about 4½ miles southeast of Keystone. The area is one of Algonkian schist and slates, partly surrounded by the Harney Peak pegmatitic granite. The ore body is a well defined vein striking northwest and southeast, with a dip of about 82° to the southwest. The vein varies considerable in width from place to place. It is about fifteen inches wide at the surface and widens to six to ten feet on the 200 foot level. It is reported to be sixteen feet wide at a maximum on the 300 foot level, but we did not get an opportunity to see that level before the mine closed down. The vein is essentially conformable with the enclosing schist walls. In the immediate vicinity of the vein the slate wall has been altered to a highly micaceous schist consisting dominately of muscovite, subordinately of biotite and quartz, and an appreciable amount of arsenopyrite and pyrite. This mica schist wall rock is quite coarse for rock of this type, the muscovite flakes averaging two to three millimeters in longest diameter, and some of them reach a diameter of one centimeter. Apatite is present in prisms of microscopic size. No tourmaline was found.

In the vein itself quartz is the principal gangue mineral, but small amounts of muscovite, and occasional coarse crystals of microcline feldspar occur. The metallic minerals of the vein are pyrite, sphalerite, galena, and minute amounts of chalcopyrite. No arseno-

pyrite could be detected by microscopic examination of the ore, and analyses of the ore show only about .05 % arsenic. This is suprising in view of the rather abundant arsenopyrite disseminated in the wall rock close to the vein. Argentite has been reported[1] from this vein, but we have been unable to detect this or any other silver mineral by microscopic examination of many sections of the ore.

Polished sections of the ore show the following sequence of deposition: first, an early pyrite, deposited in sub-iromorphic crystalline grains; second, sphalerite and galena, essentially contemporaneous with each other, as they exhibit the "mutualboundary" relationships, but with galena in part later with sphalerite as though its period of deposition continued slightly longer than that of sphalerite; chalcopyrite following the sphalerite-galena period, cutting the sphalerite in veinlets and also occuring as minute blebs in the zinc blend without relation to crystallographic directions in the latter; finally, a second generation pyrite, occuring in minute quartz veins cutting galena along cleavage planes and cutting sphalerite in an irregular manner. This later pyrite also occurs in irregular, somewhat vermicular areas in the sections, intergrown with quartz. It has a very distinctive, somewhat "mushy" appearance under the microscope. It has not only cut the earlier minerals of the ore, but apparently has replaced in part the earlier pyrite, changing it from solid, crystalline material to the "mushy" material characteristic of this late generation pyrite. Quartz seems to have been deposited all through the mineralization period, as sections show rounded, corrowed grains of early quartz and also veinlets

[1] Ziegler, Victor. Minerals of the Black Hills. S.D. State School of Mines, Bull. No. 10, p. 61, 1914.

of late quartz cutting all the earlier minerals.

The silver of the ore probably occurs principally in isomorphous mixture or solid solution with the galena, and less importantly associated with the sphalerite. As stated above, no definite silver minerals have been detected. The ratio of silver to lead varies considerably. A number of assays made by Charles Bentley show a variation in the ratio from .33 oz. silver per ton for each percent of lead to .82 oz. An average of ten assays of average grade ore and mill heads shows about one half ounce of silver for each percent of lead. In the mill, concentration of lead and silver has been efected by differential flotation, eliminating sphalerite, pyrite, and gangue. In these concentrates the Ag-Pb ratio drops and is fairly constant at about .35 oz. silver for each percent of lead. In the mill, it is evident that part of the silver-bearing mineral is not floated, and the probabilities are that the sphalerite is somewhat argentiferous. Unfortunately the zinc product from the flotation units has bee n discarded, and we have been unable to obtain any assays of that.

From the close positional relationship of this vein with the pegmatite granite, its occurrence in the pre-Cambrian rocks, and its mineralogical relationships, the deposit probably falls in the high temperature lead-silver-zinc group of Lindgren.

Production figures from the Spokane mine are not available, but as yet there has been no very important output. The mine has been developed by an incline shaft to the 800 foot level, with drifts and cross-cuts on the 60, 100, 200, and 300 levels. Some stoping has been done on the 200 level and above. Early in 1928 the power house of the company burned, and the mine has been idle since.

8. No joint financial statement is available as we are the co-owners of the property, and not partners in a partnership business. However we have operated jointly in the past on similar ventures, in harmony and to a successful conclusion.

9. $10,000.00

10. F and A Galena Lode, Yakima, Yakima No. 1, Gay Lode, Dewey Lode, Dewey No. 1 and Keola Lodes all adjoining are located in sections 26, 27, and 35, T 2S, R6E of B.H.M. Custer County, Black Hills of South Dakota.

11. Present and past claim names the same with the exception of the F and A Galena Lode which was formerly Spokane Lead and Silver Lode.

12. The property is located about four and a half miles south of Keystone, South Dakota. The C. B. & Q. RR have adequate shipping facilities at Keystone, South Dakota. The Consolidated Felaspar grinding mill and other plants located there daily ship many carloads of ore and finished products. U. S. highyay 16 is the west boundary of the Keola Lode. The roads to the mine are excellent and are in use the year round.

13. A small creek flows the Yakima Lodes. It supplies sufficient water to operate a fair sized milling plant. Electric power is available less than one half mile distant. Rates slightly over one cent per K.W.H.

14. A 20' x20' frame shed on the Keola Claim is suitable for the storage of equipment and supplies. The residence of Richard . Meiners on the west boundary of the property is used to board and house our workmen.

15. Ore and concentrates would be hauled by truck 8 miles to Keystone, and shipped via. C. B. & Q. RR to A.S. & R. smelter at Leadville, Colorado, distance approximately 475 miles.

16. Mine was opened in the late 1800's. High grade lead, up to 80% and 70 ounce per ton silver ore was shipped to the smelters. A large mill of very poor design was constructed in the 1920's. From the appearance of the flotation cells and filter and other machinery installed in the mill it is assumed that the plant was only in operation for a short period of time. Good grade ore is stacked near the shaft (I have many lumps of solid galena ten inches in diameter hand picked from the ore piled at the surface.) Old residents, living near the property state that poor management and low metal prices are the reasons for the shut-down.

17. No production reports are available in this area. Neither do the former eastern owners have them.

18. Considerable ore is contained in the dumps that could be milled at a profit. A School of Mines professor told Mr. Fillmore several years ago that $25,000.00 worth of ore lies broken in the stopes (this would be $50,000.00 at todays market prices.

18. Ore or mineralized reserves unknown as the lower levels are under water. Ore was mined to the 300 foot level in the early days. The vein is well defined. It is about fifteen inches wide at the surface and widens to sixteen feet at the 300 foot level. The deposit has been classified as high temperature and probably goes down to considerable depth.

19. A shaft put down 100 feet on the Dewey claim 60 years ago by the father of Mr. Richard W. Weiners, the former owner is reported to have intercepted a heavy dark mineral which was unknown at that time but which now is thought to be wolframite.

A surface deposit of wolframite was opened up less than one half mile north of this shaft during the latter part of World War II . Approximately $600.00 of high grade specimens (one ton) were taken from the mine at a time when the tungsten market was low. The mine

was not developed beyond the prospect stage. Indications are that the deposit strikes in the vicinity of the fore mentioned 100 foot shaft. We contemplate exploration of this area for tungsten at a later date.

20. Lead at the present. Possibly tungsten at a later date after more geological information is compiled.

21/ Proposed exploration program is to determine the extent of the lead-zinc vein in length and depth, starting at both ends of the present drifts. We propose to drill a series of diamond drill holes along the strike of vein from the surface of the ground. The time required to complete the program would be approximately six months from starting date.

22. In view of the fact that a sizable body of lead-silver-zinc ore has been opened up to the 300 foot level and drifts run for several hundred feet on the vein and that the ore bodies at the lower levels are wider and more mineralized than the upper levels, indicates that further exploration both in depth and on the strike of the vein is justified.

23.

Labor 4 men at $65.20 per week, 36 weeks	$5740.80
1 Foreman at $100.00 " " " "	3600.00
Engineering	3900.00
Supplies-consisting of gasoline, oil, diamond drill bits, explosives, etc.	4000.00
Repairs, insurance, incidentals.	3759.20
	$20,000.00

24. Time Schedule- We propose to start exploration at an early date and continue thru to the completion of the program.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1683X

Date received 6/13/51

Participation

Earl R. Amundson & W. O. Fillmore
P.O. Box 332, Spearfish, So. Dak.

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 31, 1951

Estimated cost $20,000.00

Mineral or metal Lead Tungsten

Percentage of Government participation 50%

Location of mine Near Keystone, So. Dak.

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

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    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

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State amount of power to be used, rate per hour or other cost, and source.
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    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
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    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
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(2) Milling				
(3) Shipped or sold				

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    (*b*) Submit available maps and assay data.
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THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

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THE REQUIREMENTS AND COSTS

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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Earl R. Amundson & W.O. Fillmore
(Name of company)

By Earl R. Amundson
(Signature of authorized official)

May 31, 1951
(Date)

Gen. Mgr.
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

The Applicant

1. A partnership- Earl R. Amundson and W. O. Fillmore, both of Spearfish, South Dakota.

4. Earl R. Amundson, Spearfish, South Dakota, formerly of Deadwood, South Dakota established residence at Deadwood, South Dakota December 1st, 1941. Designed, constructed and managed a 50 ton selective flotation plant treating a complex gold, silver, lead and zinc ore for the Belle Eldridge Gold Mines, Deadwood, South Dakota. This operation was a success both metallurgically and economically during the period of my management 1½ years. I have G.P.A. Audits to substantiate this statement. With the exception of a short period of time(greater part of year 1945 spent in the employ of Western Electric Company, Passiac, N.J. designing engineer) I have been engaged in mining and metallurgical work in the Black Hills of South Dakota.

W. O. Fillmore of Spearfish, South Dakota has been engaged in mining and lumbering operations in the Black Hills for the past 18 years.

5. We are the owners of the property. We acquired by purchase the Yakima, Yakima No. 1, Gay, and Keela Lodes. No encumberance on this group of claims. We acquired by purchase the Dewey and Dewey No. 1 Lodes. We hold a quit claim deed to the Dewey claims. We agreed by contract with the former owner Richard W. Meiners of Hermosa, South Dakota to pay the sum of $2,100.00 on or before June 1, 1952 if by exploration, sufficient ore is discovered on the Dewey properties to warrant economic development of same. If insufficient ore is not discovered on the Dewey properties we do not have to pay the sum of $2,100.00. In such case we agreed to return the deed to Richard W. Meiners, remove our equipment and the contract is thereby terminated. Their being no responsibility or obligation by either party if insufficient ore in the unanimous opinions of Earl R. Amundson and W. O. Fillmore

is not found. The F and A Galena Lode was acquired by re-location on May 23, 1951 by Earl R. Amundson and W. O. Fillmore of an abandoned claim. This was formerly the Spokane Lead and Silver Lode. This mine was opened in the early days and high grade lead and silver ore was mined, sorted and shipped to smelters. The South Dakota School of Mines Bulletin No. 16 Published in May 1929 pages 183-185 states the following.

ORES OF PRE-CAMBRIAN AGE

SPOKANE DISTRICT. The Spokane mining camp is located about 4½ miles southeast of Keystone. The area is one of Algonkian schist and slates, partly surrounded by the Harney Peak pegmatitic granite. The ore body is a well defined vein striking northwest and southeast, with a dip of about 82° to the southwest. The vein varies considerable in width from place to place. It is about fifteen inches wide at the surface and widens to six to ten feet on the 200 foot level. It is reported to be sixteen feet wide at a maximum on the 300 foot level, but we did not get an opportunity to see that level before the mine closed down. The vein is essentially conformable with the enclosing schist walls. In the immediate vicinity of the vein the slate wall has been altered to a highly micaceous schist consisting dominately of muscovite, subordinately of biotite and quartz, and an appreciable amount of arsenopyrite and pyrite. This mica schist wall rock is quite coarse for rock of this type, the muscovite flakes averaging two to three millimeters in longest diameter, and some of them reach a diameter of one centimeter. Apatite is present in prisms of microscopic size. No tourmaline was found.

In the vein itself quartz is the principal gangue mineral, but small amounts of muscovite, and occasional coarse crystals of microcline feldspar occur. The metallic minerals of the vein are pyrite, sphalerite, galena, and minute amounts of chalcopyrite. No arseno-

pyrite could be detected by microscopic examination of the ore, and analyses of the ore show only about .05 % arsenic. This is suprising in view of the rather abundant arsenopyrite disseminated in the wall rock close to the vein. Argentite has been reported[1] from this vein, but we have been unable to detect this or any other silver mineral by microscopic examination of many sections of the ore.

Polished sections of the ore show the following sequence of deposition: first, an early pyrite, deposited in sub-iromorphic crystalline grains; second, sphalerite and galena, essentially contemporaneous with each other, as they exhibit the "mutualboundary" relationships, but with galena in part later with sphalerite as though its period of deposition continued slightly longer than that of sphalerite; chalcopyrite following the sphalerite-galena period, putting the sphalerite in veinlets and also occuring as minute blebs in the zinc blend without relation to crystallographic directions in the latter; finally, a second generation pyrite, occuring in minute quartz veins cutting galena along cleavage planes and cutting sphalerite in an irregular manner. This later pyrite also occurs in irregular, somewhat vermicular areas in the sections, intergrown with quartz. It has a very distinctive, somewhat "mushy" appearance under the microscope. It has not only cut the earlier minerals of the ore, but apparently has replaced in part the earlier pyrite, changing it from solid, crystalline material to the "mushy" material characteristic of this late generation pyrite. Quartz seems to have been deposited all through the mineralization period, as sections show rounded, corrowed grains of early quartz and also veinlets

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of late quartz cutting all the earlier minerals.

The silver of the ore probably occurs principally in isomorphous mixture or solid solution with the galena, and less importantly associated with the sphalerite. As stated above, no definite silver minerals have been detected. The ratio of silver to lead varies considerably. A number of assays made by Charles Bentley show a variation in the ratio from .33 oz. silver per ton for each percent of lead to .82 oz. An average of ten assays of average grade ore and mill heads shows about one half ounce of silver for each percent of lead. In the mill, concentration of lead and silver has been effected by differential flotation, eliminating sphalerite, pyrite, and gangue. In these concentrates the Ag-Pb ratio drops and is fairly constant at about .35 oz. silver for each percent of lead. In the mill, it is evident that part of the silver-bearing mineral is not floated, and the probabilities are that the sphalerite is somewhat argentiferous. Unfortunately the zinc product from the flotation units has bee n discarded, and we have been unable to obtain any assays of that.

From the close positional relationship of this vein with the pegmatite granite, its occurrence in the pre-Cambrian rocks, and its mineralogical relationships, the deposit probably falls in the high temperature lead-silver-zinc group of Lindgren.

Production figures from the Spokane mine are not available, but as yet there has been no very important output. The mine has been developed by an incline shaft to the 300 foot level, with drifts and cross-cuts on the 60, 100, 200, and 300 levels. Some stoping has been done on the 200 level and above. Early in 1928 the power house of the company burned, and the mine has been idle since.

8. No joint financial statement is available as we are the co-owners of the property, and not partners in a partnership business. However we have operated jointly in the past on similar ventures, in harmony and to a successful conclusion.

9. $10,000.00

10. F and A Galena Lode, Yakima, Yakima No. 1, Gay Lode, Dewey Lode, Dewey No. 1 and Keola Lodes all adjoining are located in sections 26, 27, and 35, T 2S, R8E of B.H.M. Custer County, Black Hills of South Dakota.

11. Present and past claim names the same with the exception of the F and A Galena Lode which was formerly Spokane Lead and Silver Lode.

12. The property is located about four and a half miles south of Keystone, South Dakota. The C. B. & Q. RR have adequate shipping facilities at Keystone, South Dakota. The Consolidated Feldspar grinding mill and other plants located there daily ship many carloads of ore and finished products. U. S. highway 16 is the west boundary of the Keola Lode. The roads to the mine are excellent and are in use the year round.

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15. Ore and concentrates would be hauled by truck 6 miles to Keystone, and shipped via. C. B. & Q. RR to A.S. & R. smelter at Leadville, Colorado, distance approximately 475 miles.

16. Mine was opened in the late 1800's. High grade lead, up to 80% and 70 ounce per ton silver ore was shipped to the smelters. A large mill of very poor design was constructed in the 1920's. From the appearance of the flotation cells and filter and other machinery installed in the mill it is assumed that the plant was only in operation for a short period of time. Good grade ore is stacked near the shaft (I have many lumps of solid galena ten inches in diameter hand picked from the ore piled at the surface.) Old residents, living near the property state that poor management and low metal prices are the reasons for the shut-down.

17. No production reports are available in this area. Neither do the former eastern owners have them.

18. Considerable ore is contained in the dumps that could be milled at a profit. A School of Mines professor told Mr. Fillmore several years ago that $25,000.00 worth of ore lies broken in the stopes (this would be $50,000.00 at todays market prices.

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19. A shaft put down 100 feet on the Dewey claim 60 years ago by the father of Mr. Richard W. Meiners, the former owner is reported to have intercepted a heavy dark mineral which was unknown at that time but which now is thought to be wolframite.

A surface deposit of wolframite was opened up less than one half mile north of this shaft during the latter part of World War II. Approximately $600.00 of high grade specimens (one ton) were taken from the mine at a time when the tungsten market was low. The mine

was not developed beyond the prospect stage. Indications are that the deposit strikes in the vicinity of the fore mentioned 100 foot shaft. We contemplate exploration of this area for tungsten at a later date.

20. Lead at the present. Possibly tungsten at a later date after more geological information is compiled.

21/ Proposed exploration program is to determine the extent of the lead-zinc vein in length and depth, starting at both ends of the present drifts. We propose to drill a series of diamond drill holes along the strike of vein from the surface of the ground. The time required to complete the program would be approximately six months from starting date.

22. In view of the fact that a sizable body of lead-silver-zinc ore has been opened up to the 300 foot level and drifts run for several hundred feet on the vein and that the ore bodies at the lower levels are wider and more mineralized than the upper levels, indicates that further exploration both in depth and on the strike of the vein is justified.

23.

Labor 4 men at $65.20 per week, 26 weeks	$5740.80
1 Foreman at $100.00 " " " "	2600.00
Engineering	3000.00
Supplies-consisting of gasoline, oil, diamond drill bits, explosives, etc.	4000.00
Repairs, insurance, incidentals.	5759.20
	$30,000.00

24. Time Schedule- We propose to start exploration at an early date and continue thru to the completion of the program.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. Dma-1683X

Date received 6/13/51

Participation

Earl R. Amundson & W. O. Fillmore
P.O. Box 332, Spearfish, So. Dak.

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 31, 1951

Estimated cost $20,000.00

Mineral or metal Lead Tungsten

Percentage of Government participation 50%

Location of mine Near Keystone, So. Dak.

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Earl R. Amundson & W.O. Fillmore
(Name of company)

By Earl R. Amundson
(Signature of authorized official)

May 31, 1951
(Date)

Gen. Mgr.
(Title)

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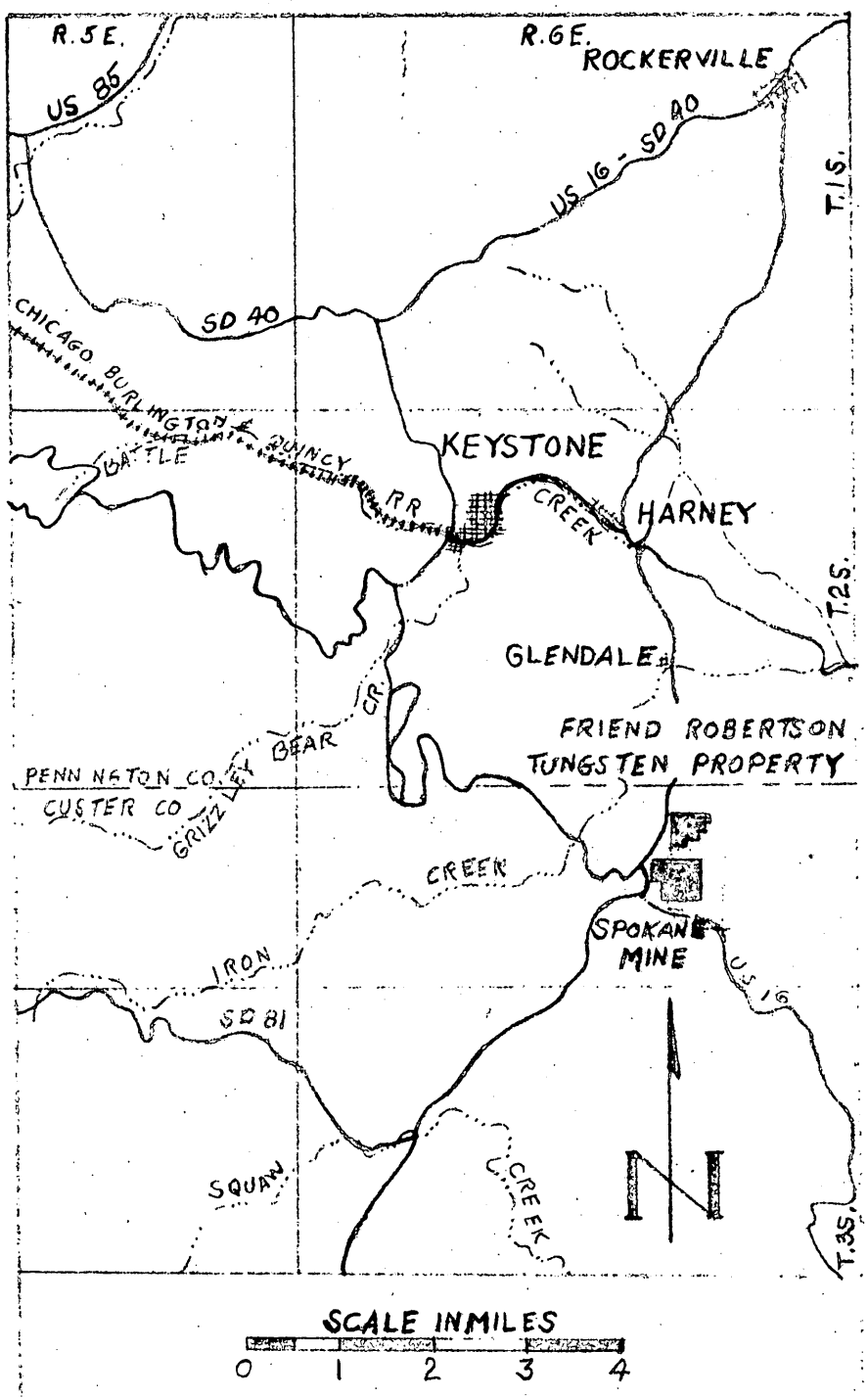
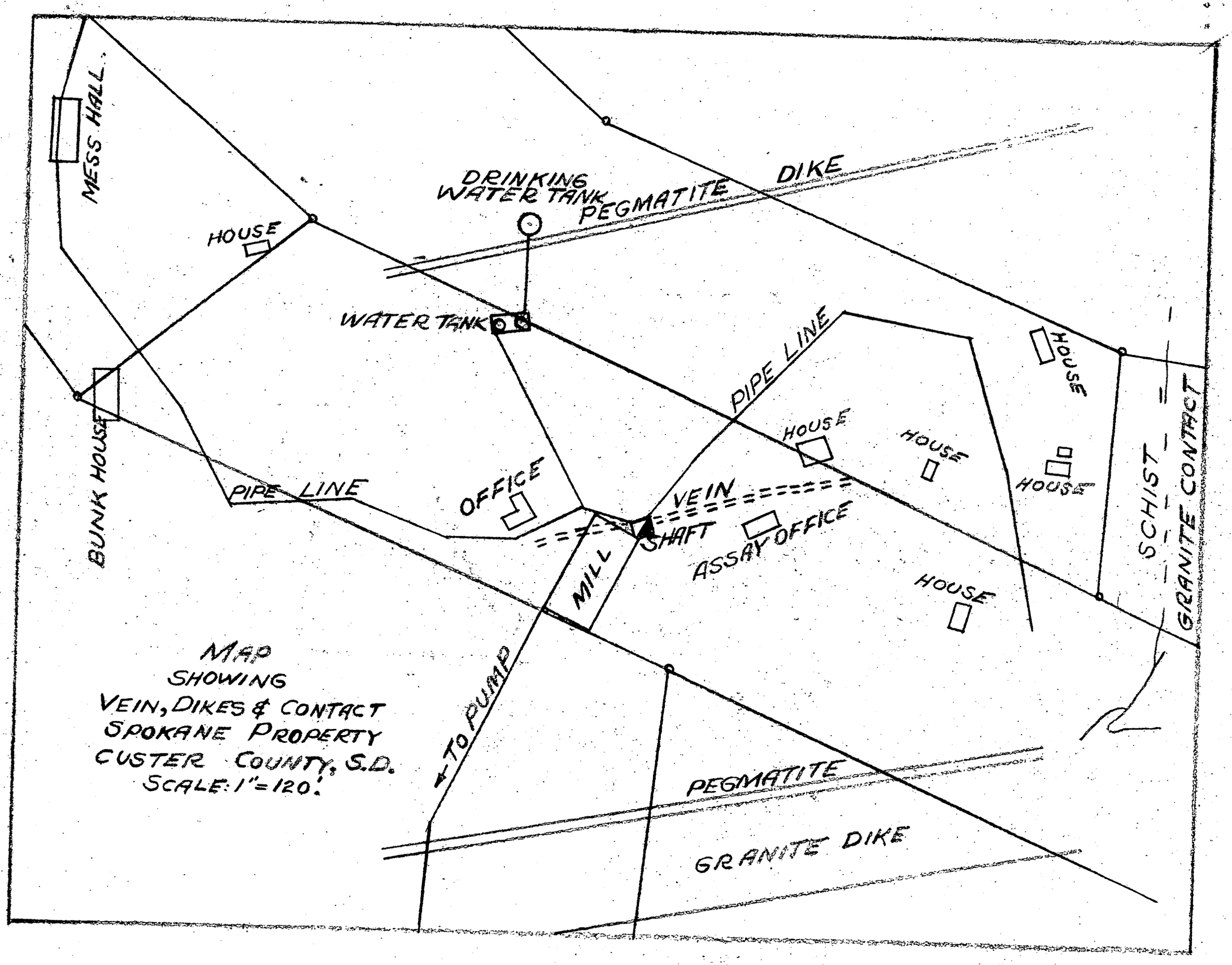
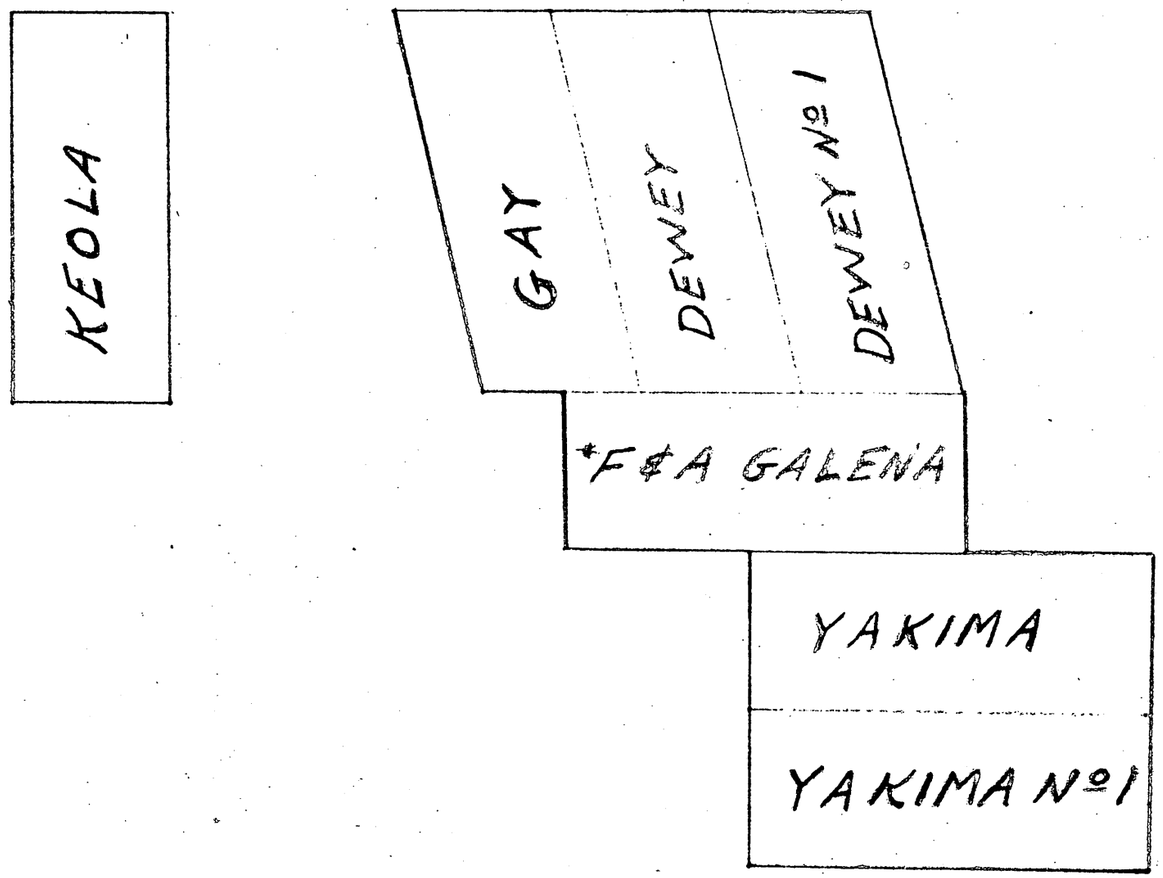


LOCATION MAP OF
SPOKANE LEAD AND SILVER MINE

Dma - 1683 X



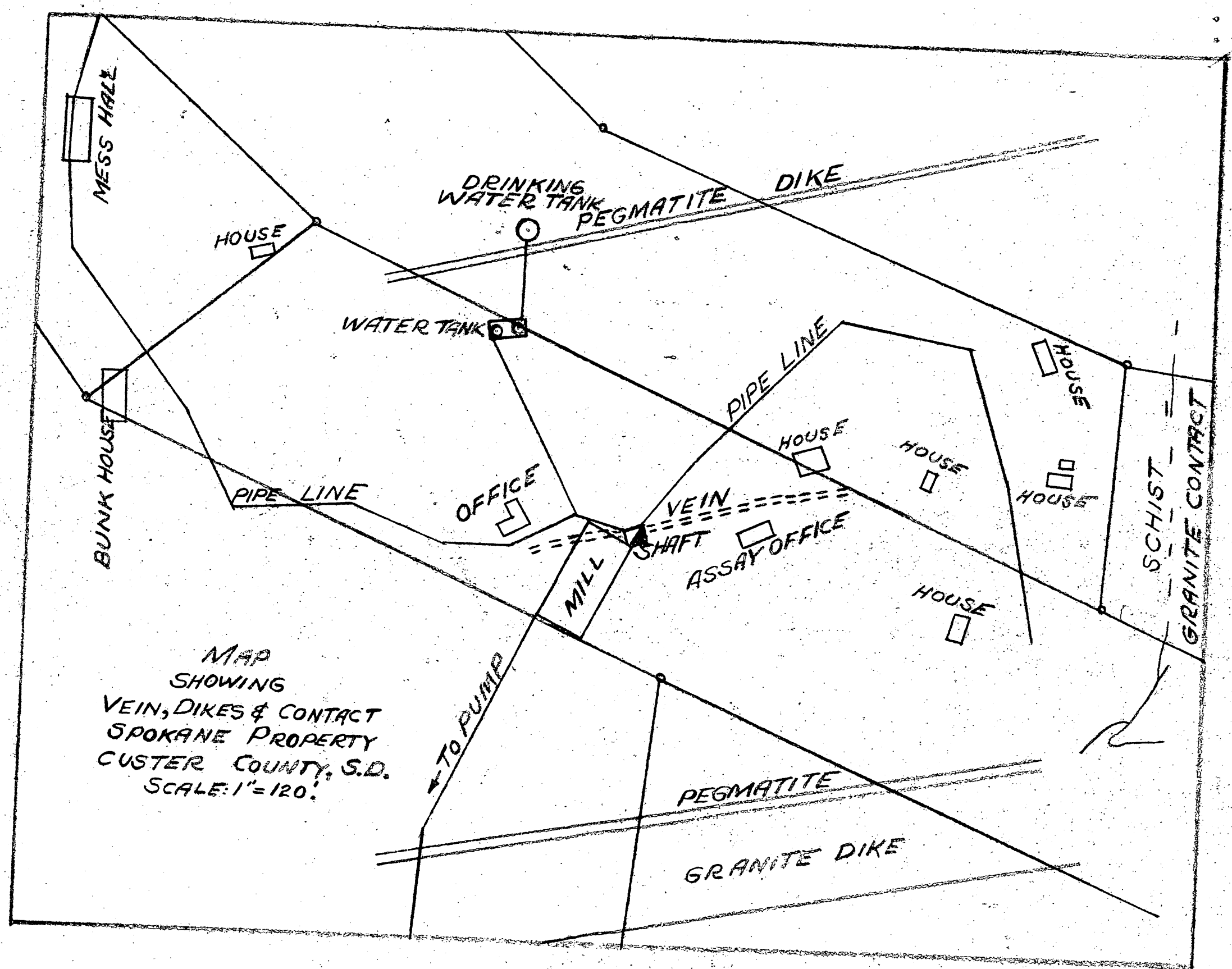
MAP
SHOWING
VEIN, DIKES & CONTACT
SPOKANE PROPERTY
CUSTER COUNTY, S.D.
SCALE: 1" = 120'



Tentative Map of Property May 24, 1951. Property lines are being surveyed at this time. Maps will be prepared at an early date. Property located in Sections 26, 27, & 35 T2S, R6E. B.H.M. Custer County, S.D.

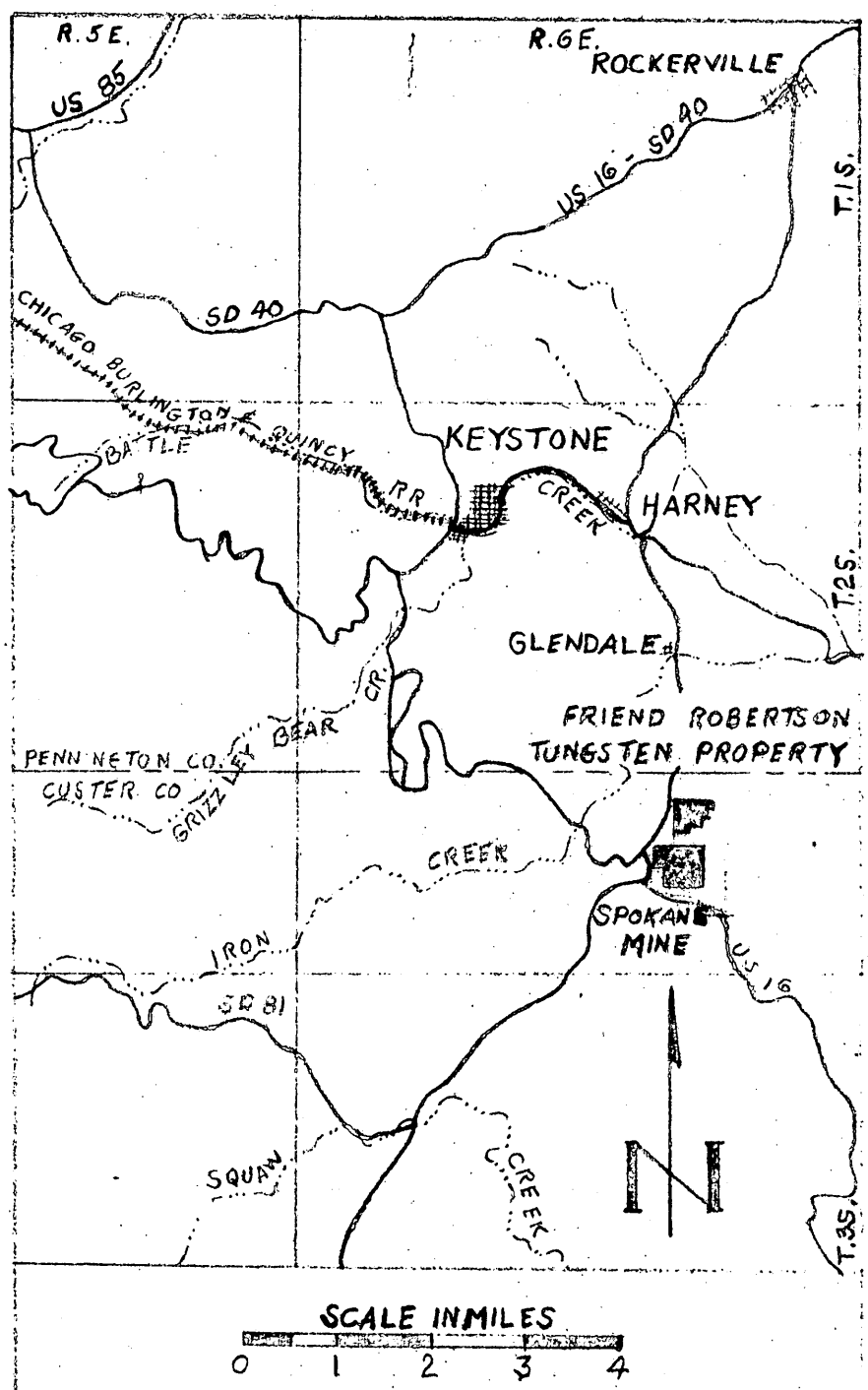
* Formerly Spokane Lead & Silver.

Scale 1" = 600'

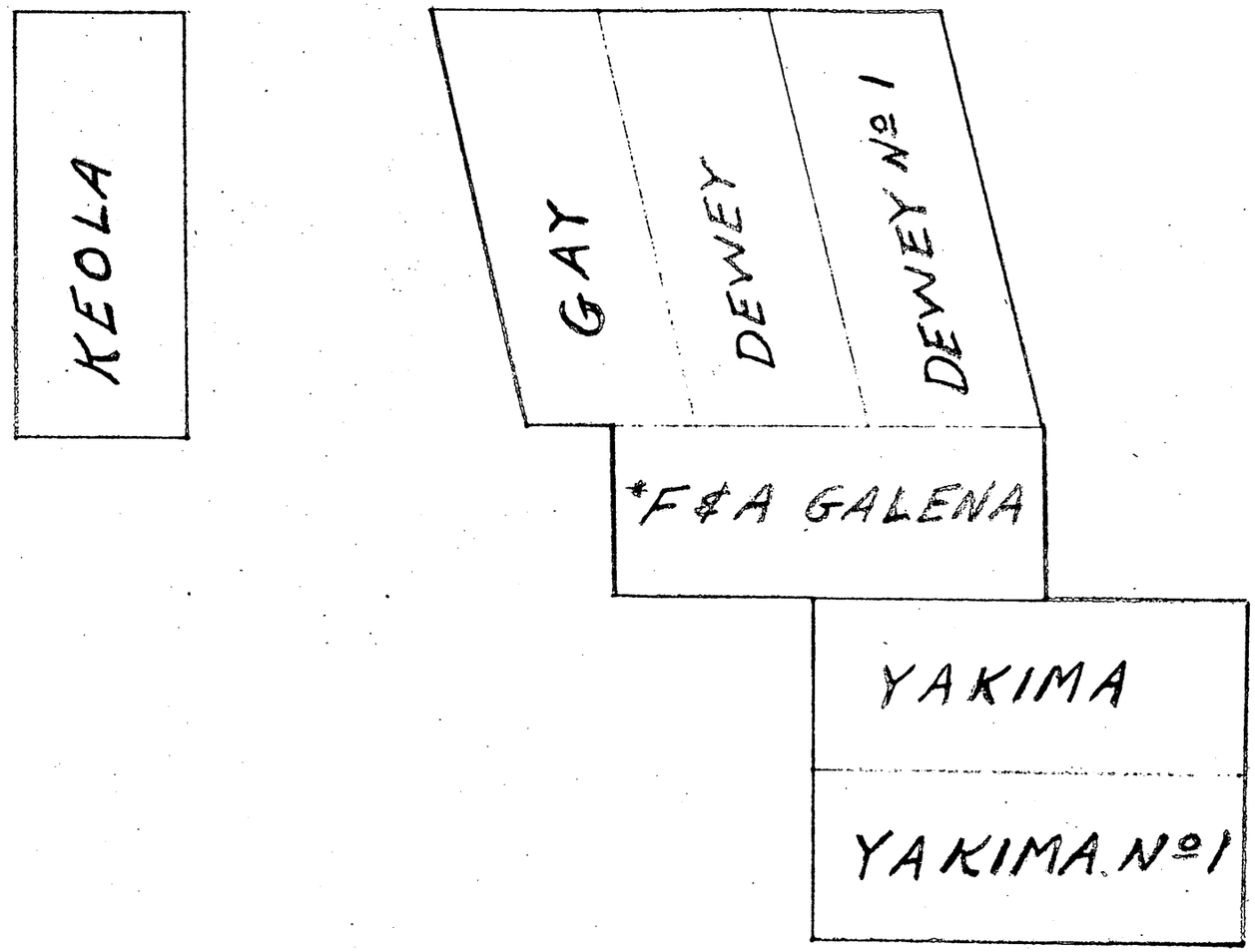


MAP
SHOWING
VEIN, DIKES & CONTACT
SPOKANE PROPERTY
CUSTER COUNTY, S.D.
SCALE: 1" = 120'

Ama - 1683



LOCATION MAP OF
SPOKANE LEAD AND SILVER MINE



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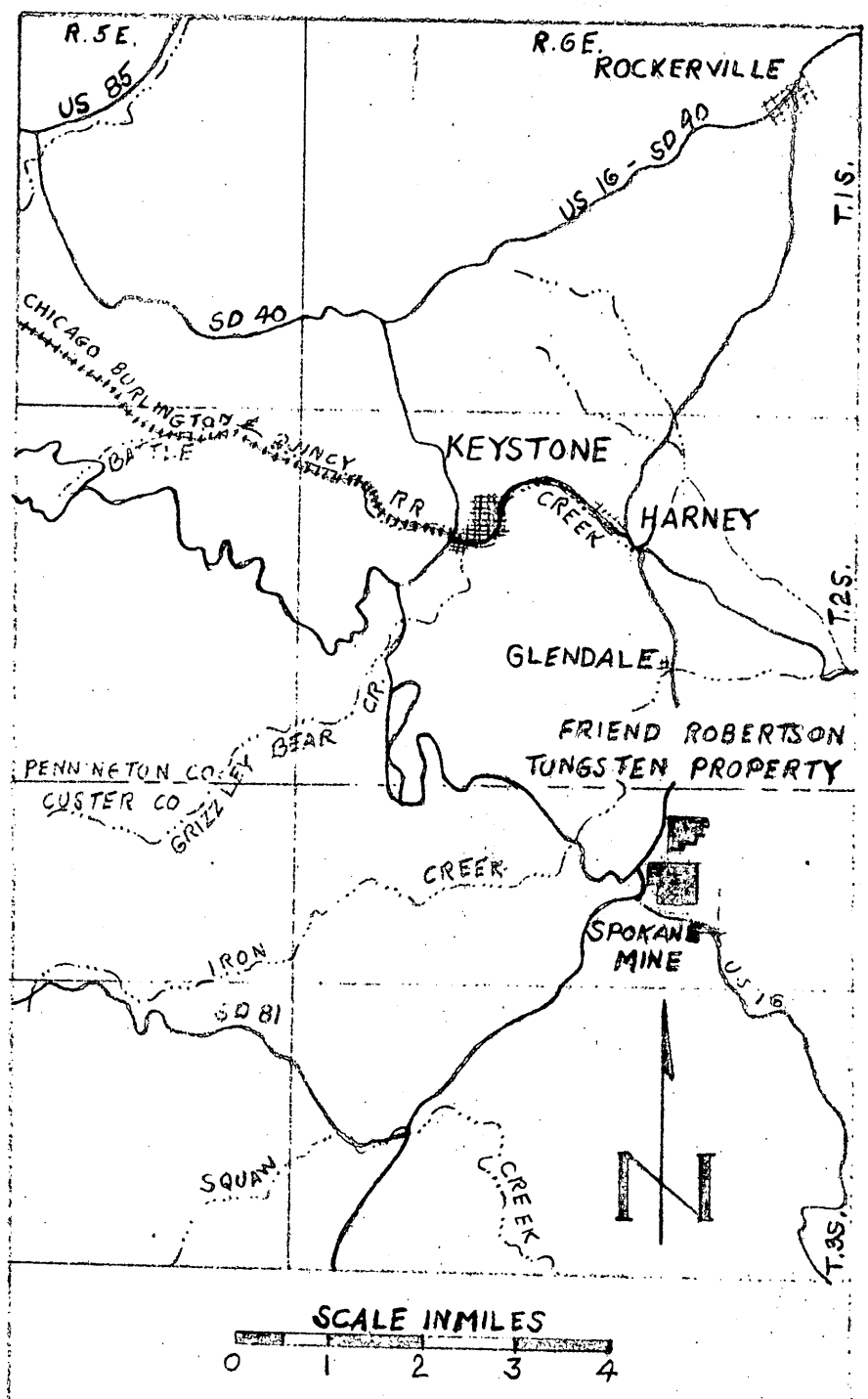
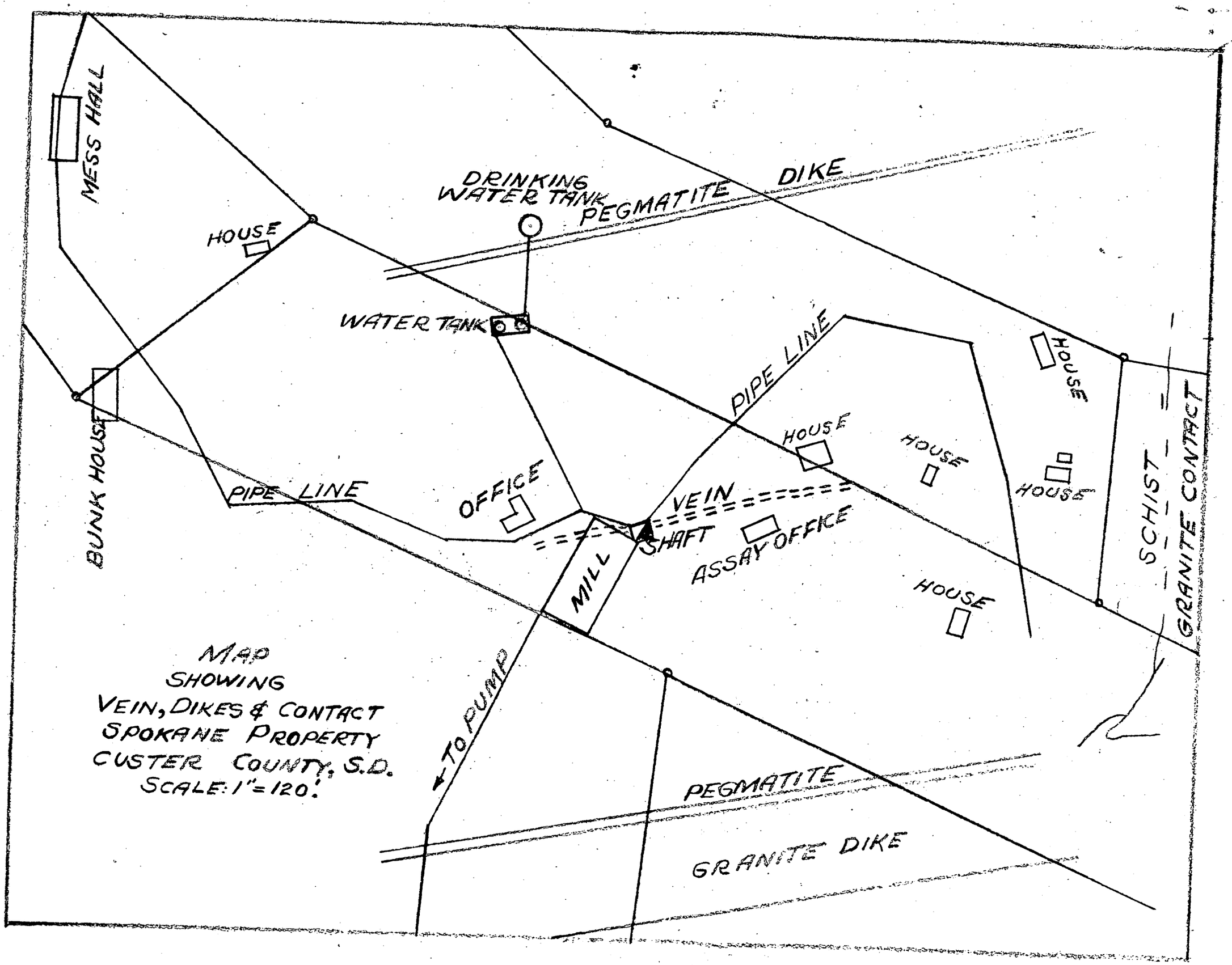
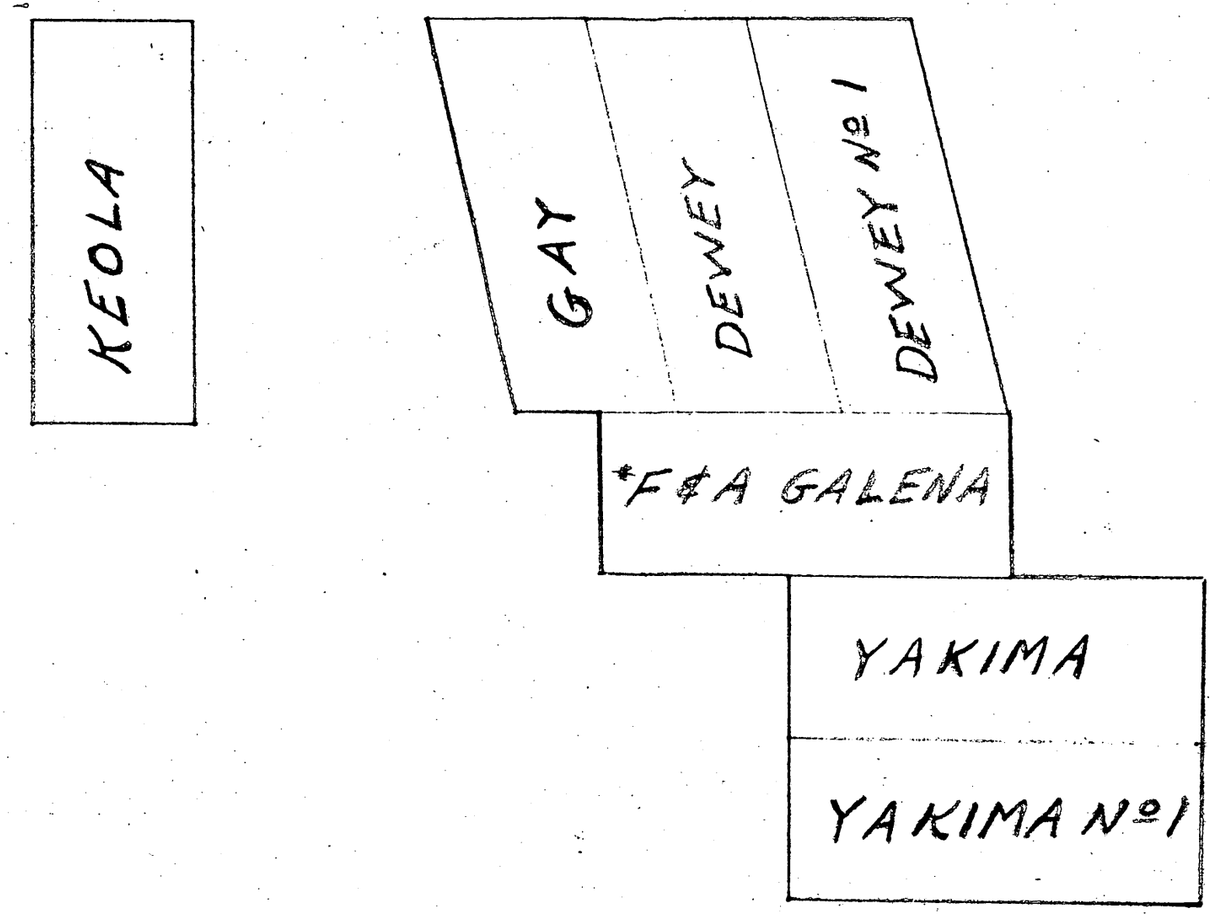
Scale 1" = 600'



LOCATION MAP OF
SPOKANE LEAD AND SILVER MINE

Dma - 1683 X


MESS HALL
HOUSE
DRINKING WATER TANK
PEGMATITE
DIKE
WATER TANK
PIPE LINE
HOUSE
HOUSE
HOUSE
HOUSE
HOUSE
BUNK HOUSE
PIPE LINE
OFFICE
VEIN
SHAFT
ASSAY OFFICE
MILL
SCHIST
GRANITE CONTACT
MAP
SHOWING
VEIN, DIKES & CONTACT
SPOKANE PROPERTY
CUSTER COUNTY, S.D.
SCALE: 1" = 120'
TO PUMP
PEGMATITE
GRANITE DIKE



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