DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 5006

Application
- [x] Denied
- [ ] Withdrawn

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

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

Folder No. 1:

Left Side

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

Right Side

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

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

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

Additional Folders:

Left Side

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

Right Side

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

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

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

C O P Y

EXPLANATION OF CLAIM, DIXIE NO. 2

Regarding the title of Dixie No. 2:

Mr. Thomas Toner and Mr. W. P. Walling located Dixie No. 2, possibly not just as it is today but under the name of Black Prince. Upon the death of Mr. Toner, Mr. Walling went through a process of law to clear the title for himself; the process was not completed as Mr. Toner's interest should have been sold, but was not. I did the assessment work for Mr. Walling on the Black Prince Claim for several years, without pay.

I believe Mr. Walling died in 1936. I consulted a lawyer by the name of Hicks and he advised me to locate the claims, one of which is now Dixie No. 2.

Mr. Walling was past eighty one when he died. Mr. Toner and Mr. Walling struck the ore back 400 feet in the tunnel and had gone on farther.

This is the information to the best of my knowledge.

Signed /s/ Frank Prindle

RECEIVED
MAY 16 1958
U. S. G. S.
SPOKANE, WASH

No. 80. QUITCLAIM DEED — Printed and for sale by The J. K. Gill Co., Portland, Oregon

Know All Men By These Presents That

I, Frank A. Prindle, an individual

being of lawful age, in consideration of One fourth interest in the Prindle Mining Company, an Oregon Corporation, said interest to be vested upon execution and filing of this document Dollars, to paid by of

has remised, released, and forever quitclaimed, and by these presents, do remise, release, and forever quitclaim, unto the said Prindle Mining Company, Inc.

and unto its heirs and assigns, all of my rights, title and interest in and to all that parcel of real estate situate in Grant County of the State of Oregon, to-wit:

The following mining claims possessed by Frank A. Prindle, and as recorded with the County Clerk of Grant County, Oregon

Claim Name	Date of Location	Mining Records Volume	Mining Records Page
Blue Quartz	September 18, 1945	V	407-8
Protection	May 10, 1946	S	218
Red Ring	July 5, 1945	M	157-8
Jack Pot	July 2, 1945	M	195-6
Dixie Saddle	July 3, 1936	T	15
Dixie No. 1	July 3, 1936	T	16
Dixie No. 2	July 3, 1936	T	16

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DMEA
RECEIVED MAR 30 1956
DATE INITIAL CODE

To Have and to Hold, the same with all the privileges and appurtenances thereunto belonging to said Prindle Mining Company, an Oregon Corporation and to its heirs and assigns forever without exception or limitation.

In Witness Whereof, I have hereunto set my hand and seal this 29th day of March, A. D. 1956.

Signed, Sealed and Delivered in the Presence of us as Witnesses:

Frank A. Prindle (SEAL)
Frank A. Prindle

Alpha C. McElhaten Portland Oregon (SEAL)
Leroy T. Foomon Portland Ore (SEAL)
Delma L. Hershberger, Beaverton, Ore (SEAL)

STATE OF OREGON,
County of Multnomah } ss.

This Certifies, That on this 11th day of April, A. D. 19 58, before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within named Frank A. Prindle who is known to me to be the identical individual described in and who executed the within instrument, and acknowledged to me that he executed the same as his free act and deed, for the uses and purposes therein expressed.

In Testimony Whereof, I have hereunto set my hand and notary seal the day and year last above written.

Jule M Persich
Notary Public for Oregon.

My commission expires 11/29/59, 19

#37957

QUITCLAIM DEED

TO

STATE OF Oregon
County of Grant } ss.

I certify that the within instrument was received for record on the 14 day of April A. D. 19 58 at 1:07 o'clock A M., and recorded in Book 78 on page 578-9 Records of Deeds of said County.

Witness my hand and seal of County affixed.

John Livelra
Recorder of Conveyances.

By /s/ Elma Campbell
Deputy.

FROM THE OFFICE OF

SEAL

INDEXED

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

FILE COPY
DMEA
RECEIVED 5 '58

WSM

May 1, 1958

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: New Application (Cobalt)
Prindle Mining Company
Dixie Mt.
Grant County, Oregon

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application for DMEA aid to explore for cobalt in Grant County, Oregon.

The applicant proposes to explore by rehabilitating an old shaft, deepening an existing shaft, and diamond drilling 11 holes at an estimated cost of $75,059.73, of which the Government's share would be $56,294.80.

An examination will be scheduled as soon as possible.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I

Enclosures

cc: USBM (2)
Albee

Form MF–103
Revised Feb. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

APPLICATION FOR AID IN AN EXPLORATION PROJECT

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

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

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

RECEIVED
MAY 1 1958
U. S. G. S.
SPOKANE, WASH.

APPLICANT NOT TO USE THIS BLOCK

Docket Number: DMEA-5006
Date Received: 5-5-58
Government Participation %:
Region: I
Division Code: 400

BUSINESS ORGANIZATION (Check one)

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

State in which firm is organized: Oregon

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
Frank A. Prindle	Sparks, Nev.	President
Dean L. Harshberger	Beaverton, Ore.	Exec. Vice Pres.
Alpha C. McCollister	Portland, Ore.	Vice President
Leroy T. Forman	Boring, Ore.	Vice President
John O. Holeman	Portland, Ore.	Sec.-Treas.

Mineral(s) for which you wish to explore: COBALT

Estimated Cost of Project: $ 75,059.73

LOCATION OF PROPERTY

Name	County	State
Dixie Mt.	Grant	Oregon

GENERAL INSTRUCTIONS

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

CERTIFICATION

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

April 15, 1958
Dated

Frank A. Prindle
BY *(Signature)*
Frank A. Prindle
President
Title

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

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

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

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

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

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

2. *Physical Description:*

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

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

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

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

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

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

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

3. *Accessibility of Project:*

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

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

4. *The Exploration Project:*

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

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

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

5. *Experience:*

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

6. *Estimate of Costs:*

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

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

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

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

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

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

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

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

Note — No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

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

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

* * * * *

INT.-DUP. SEC., WASH., D.C. 15539

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

ORIGINAL FILE COPY
DMEA
RECEIVED 5 1958

1. PROPERTY RIGHTS:

(a) The property involved consists of seven unpatented mining claims all of which are located in Sections 29 and 30 of T.11 S., R.34 E., Willamette Meridian, in Grant County, Oregon. (See Exhibit #18).

No part of the project land or workings should not be subject to Government lien for royalty payments.

The location notices of all seven claims are recorded in the County Clerk's Office of Grant County, Oregon, as follows:

Claim Name	Book No.	Page No.
Blue Quartz	78	578
Protection	78	578
Red Wing	78	578
Jack Pot	78	578
Dixie Saddle	78	578
Dixie No. 1	78	578
Dixie No. 2	78	578

(b) Other than by the claim names, as shown above, the property is locally known as the Prindle Claims. The property is located on Dixie Mountain which is also a well known landmark.

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon.

(c) The Prindle Mining Company is now holder of the mining claims.

(d) There are no liens, mortgages, or other encumbrances on the property.

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Beaverton, Oregon.

2. PHYSICAL DESCRIPTION:

(a) The inclosed map shows locations of all previous operations in which, incidentally, Mr. Prindle took part. The original explorations started prior to 1900 and it is to be borne in mind that all thru the years gold was the metal being sought. Most of the explorations to be described was performed on a small scale and by hand work.

(1) Lower Adit: This lower adit represents the greatest previous effort. The adit, located as shown on the map, extends into the mountain approximately 700 lineal feet. A vertical shaft, 140 feet from the adit entrance, was excavated to 35 feet below the adit floor, and a second shaft, 400 feet from the adit entrance, was excavated to 15 feet below the adit floor. In all of these operations no gold, in mineable quantity, was found. The adit is approximately 4.5 feet by 6 feet in section and was excavated to be gravity-drained. The shafts, approximately 7 feet by 9 feet, were started at vein locations. Results of tests of ore from the adit and shafts are set forth in paragraph 2(f), below.

(2) Upper Adit: The upper adit only reached a penetration of 112 lineal feet; there were no shafts excavated. Distinctive veins were present at approximately 80 feet and 100 feet; there were no drifters or further

follow-up. The adit was approximately 4.5 feet by 6 feet in section and was excavated to be gravity-drained. The adit has since caved in and has not been entered for many years. Tests of ore from this adit are given in paragraph 2(f).

(3) New Adit: The new adit, as shown has only reached a penetration of approximately 35 feet. This adit has been started as assessment work and heads toward a shaft next described. No tests have been made of any materials excavated from this adit.

(4) Caved-in Shaft: This shaft, located as shown, was excavated to a depth of 93 feet and reached this depth during the winter of 1911-1912. The shaft was not of large cross section and had penetrated approximately 40 feet of overburden. The overburden caved in filling the shaft with cribbing and earth. A sample of the ore from the bottom of the shaft was sent to Colorado Assay Co., Denver, with a report of 1.82% Cobalt, Silver valued at approximately $1.00 and to their dismay gold valued at only 80¢. Record of the assay was not preserved as cobalt was of low value at the time and gold was in insufficient quantity. Approximately 25 years later an attempt was made to again reach the bottom of the shaft. The attempt was made by sinking an additional shaft adjacent to the

original shaft. The second shaft reached a penetration of approximately 75 feet when it proved to be too costly for the uncertain results; this shaft has since caved in. A log cabin shelter, approximately 30 feet by 40 feet had been constructed over the shaft for protection of the workers from the elements.

(5) Exploration Shaft: This shaft was excavated to a penetration of approximately 28 feet. Work was abandoned as the prospects were fruitless. Time of this work not recalled.

(6) Drill Holes 1, 2 and 3: Becoming interested in the records of the operations on the claims, the members of this corporation (then unincorporated) decided to try proving the presence of the cobalt at the bottom of the caved in shaft by core drilling. This work was done during the summer of 1957. A hydraulically operated drill machine with 100 feet of NX steel was employed. DH-1, drilled vertically and approximately 25 feet easterly from the old shaft to a penetration of 102 feet (the limit of the steel being used) proved fruitless. Drill Hole No. 2 was an attempt to angle into the bottom of the old shaft. The hole was started approximately 27 feet westerly from the

center of the old shaft realizing the difficulties to be encountered in trying to penetrate the loose materials and timbers filling the old shaft. At a penetration of 91 feet it was decided to abandon the hole as the possibility of loosing the steel seemed too great. Drill Hole No. 3 was made from the same location as DH-2 but was drilled vertically. The core taken from the bottom of DH-3 (penetration of 102 feet) was tested; the presence of cobalt is indicated as can be seen from the spectographic analysis set forth in paragraph 2(f) below. After completion of DH-3 it was decided to attempt to complete DH-2, which after all was the primary goal of this drilling explorations. The core taken from the bottom of the DH-2 (at a depth of 99 feet below the surface at the old shaft) was sent for spectographic analysis, the results of which are also shown in paragraph 2(f). The results of these drilling operations are not considered adequately conclusive as there is no reason to doubt the previous report of 1.82% cobalt and as we could easily have missed the vein bearing the cobalt. Further explorations in this area are included in the program of this application.

(7) Production Facilities: The production facilities remaining at the old mining operations is practically nil. There is a small shed located at the caved in shaft.

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Beaverton, Oregon

The shed is suitable for future use. At the lower tunnel is an open front shelter that may be of some use. Also at this location is a very old compressor considered of no value nor possible use. There is a small machine shed located at the upper tunnel; this shed can be used for storage of small tools. There is a small steel dump car located at the new tunnel. The dump car is hand operated but is usuable. There is a 2-room cabin constructed on the claim "Protection". The cabin has been used by Mr. Prindle while doing his annual assessment work on the claims. The cabin is liveable and is fully equipped. A small spring is located near the cabin. There are no other actual production facilities.

(b) The principals of this corporation are Messrs. Prindle, McCollister, Forman and Harshberger. Mr. Prindle, previous holder of the claims, participated in all the above operations. The other three principals organized and performed the drilling operations in 1957; Mr. Prindle also assisted in the drilling operations. The three drill holes represents considerable outlay and effort and the investment in the other operations is inestimatable. Now that this corporation includes Mr. Prindle and is holder of of the claims it is considered that the corporation's interests in the above operations is all-inclusive.

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Beaverton, Oregon

(c) There has been no known past production from these claims. All operations, except the exploration drilling of 1957, were performed in search of gold and gold was never found in sufficient quantity to warrant milling. With the recent installation of a reduction mill near Prairie City, Oregon the prospects of the present discoveries being mined is quite encouraging as can be seen on the assay report, Exhibit No. 5. The new reduction mill is located only 17 miles from these claims and is equipped to recover Cobalt, Copper, Gold and Silver along with other elements.

(d) The quantities of the ore reserves on the property is not determined nor estimated. The presence of cobalt has been indicated by samples taken,the results of the test of such samples is the factor inducing further explorations. The description of the samples taken, the methods, locations and results are given in detail in sub-paragraph (f), below.

(e) Lindgren infers that the gold and silver mineralization of the Quartzburg District most likely occurred in Jurassic time. On the basis of Thayer's stratigraphy it most likely accompanied the large intrusions of quartz diorite. The gold and silver are found in high-angle veins containing quartz as the principal gangue mineral. According to Lindgren the sulphide mineralization came at a different time than the gold and silver, and consists of replacement deposits along other high-angle veins. He identified pyrite, chalcopyrite, pyrrhorite, marcasite, and smaltite. Only the chalcopyrite and smaltite appear to have potential economic worth. The gangue minerals associated with the sulphides are principally quartz and tourmaline, and, because of the presence of tourmaline, the mode of emplacement was most likely pneumatolitic. The sulphide veins appear to be associated chiefly with the Triassic greenstones and accompanying igneous rocks. At the adits on the Dixie No. 1 and No. 2 claims, tourmaline is the principal gangue mineral in the veins, and with it is associated the greatest amount of metallic mineralization. Pyrite and chalcopyrite can be distinguished with the unaided eye, but smaltite apparently is too sparsely distributed to be identified without resorting to polished sections. Its occurrence can be reasonably inferred, however, from the presence of cobalt and arsenic in the analyses.

As shown on the geologic sections accompanying the plan of exploration, two veins cut across the Dixie No. 2 claim. The southernmost vein is 6 feet thick; the other is

40 feet thick. Both show sulphide mineralization but the 40 foot vein shows considerably more. However, the analyses indicate that the 6 foot vein is richer in cobalt. Both veins dip steeply to the northwest. This is opposite in direction but only slightly different than the dip of the veins in the Standard Mine which lies about three miles to the southwest of the Prindle Mining Company property.

On the basis of proved mineralization on the claims, the production records of the Quartzburg District, and the present demand for cobalt, the writer believes that more extensive exploration of the Prindle Mining Company property is warranted. As indicated on the plan and sections, the location and angle of the holes is designed to both explore in depth and prove out reserves of ore. However, should the forthcoming geologic mapping discover other areas of mineralization, it may be advisable to use one or two holes in exploring the new areas.

A milling test should be made in the near future for the purpose of better ascertaining the economic potential of the presently available ore. Concentrates of copper and cobalt should be made, and an investigation into the possibilities of salvaging zirconium and boron should be undertaken.

Paul W. Howell

Paul W. Howell
Geologist

6 April 1958

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

(f) The reasons for expecting to find cobalt-bearing ore are based upon samples taken and upon a report by Mr. Prindle of a sample taken in 1912 from the caved in shaft. Samples were taken from all previous operations and are here described in their order of prospectiveness.

(1) At the old caved in shaft:

I This location is considered the most prospective due to the reported assay of 1.82% cobalt-ore removed from the bottom of the shaft in the year of 1912. As afore stated the copy of the assay was not preserved due to the low value and the then non-interest in cobalt. Several pieces were gathered from the bottom of the shaft to make up the sample. We have no reason to doubt the validity of the report.

II Sample S-1083 (Exh. #1) was the core taken from the Drill Hole No. 3 which was approximately 27 feet westerly from the center of the old caved in shaft. The sample tested was the last core taken from the hole. The core was broken and quartered to obtain the sample material. The Spectographic Analysis report indicates the presence of cobalt in a concentration of from .01% to .001%.

III Sample S-1077 (Exh. #2) was the last core taken from Drill Hole No. 2. Drill Hole No. 2 was

started approximately 26 feet westerly from the center of the old caved in shaft and was drilled on a slant computed to hit the center of the floor of the shaft. The core had been ground to pieces and lost except for the last 10 or 12". This piece was sent for spectrographic analysis. No cobalt was reported.

(2) At the lower Tunnel: Several samples were taken from this area the most fruitful of which came from the shallow shaft excavated from the tunnel floor approximately 400 feet from the portal. Other areas of the tunnel are not barren and a review of the samples taken is as follows:

I Sample S-1080 (Exh. #3): The shafts excavated at 150 feet and at 400 feet from the tunnel entrance were excavated after work of further penetration by tunnel was stopped. The materials excavated from the two shafts were kept in separate piles. This sample was obtained by "grabbing" generous quantities of pieces from all over and in the pile from the 400-foot shaft. The sample was well broken, quartered and re-quartered. This is the best report obtained showing a fair report of cobalt along with copper and other minerals.

II Sample S-1078 (Exh. #4): This sample was taken from the same pile as the sample next above (the 400-foot shaft pile) but was from one large piece

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P.O. Box 315
Beaverton, Oregon

that seemed heavier and looked darker than the rest of the pile. The sample was sent for spectographic analysis more out of curiosity than anything else. However, the report is encouraging and compares with Sample S-1080.

III Sample P-21903 (Exh. #5): This is an assay report intended to provide us with the most accurate information on the contents of the 400-foot shaft. Samples 1078 and 1080 were combined (in the laboratory) to provide the sample for assay.

(Note: It is our intention to run a quantity of this ore thru the mill to determine recovery percentages. Deepening this shaft in search of richer cobalt ore is included in our proposed exploration project. The spoils from this exploration may be milled and marketed if same can be done profitably).

IV Exhibit #6: This is an assay report procurred by Mr. Prindle in 1941. The sample assayed was likewise "grabbed" from the spoils removed from the 400-foot shaft. The report is here included to substantiate the above reports.

V Exhibit #7: This is a spectrographic analysis of a sample chipped from the bottom of the 400-foot shaft by Mr. Prindle in 1938. This analysis is comparable to our Samples S-1080 and S-1078 above and is here included to further substantiate the above reports.

VI Sample S-1082 (Exh. #8): This sample was obtained by chipping from the sides of the tunnel across a vein 40 feet in width and approximately 450 feet from the tunnel portal. The material was so hard that a proper

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Beaverton, Oregon

sampling channel was impossible without machinery. The pieces were chipped at random and the sample submitted for testing was obtained by quartering. This sample produced an indication of cobalt along with other minerals.

VII Sample S-1081 (Exhibit #9): This sample was taken from along the easterly wall of the tunnel and across a vein 6 feet in width and approximately 400 feet from the tunnel portal. The sample was obtained by chipping at random and was quartered for submission for test. The report indicates the presence of cobalt along with the other minerals.

VIII Sample S-1079 (Exhibit #10): In order to make the sampling of the tunnel more or less complete, this sample was taken from the tunnel walls along the section from the portal to the first shaft at 150 feet. The sample was obtained by chipping at random and was quartered to reduce the size to send to the laboratory. This sample did not indicate presence of cobalt but other minerals were indicated.

IX Sample S-1086 (Exhibit #11): This sample is a mixture (at the laboratory) of our samples 1079, 1080, 1081 and 1082. The purpose of mixing the samples was to determine what the prospects for open-cut mining might be.

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X Sample No. 73275 (Exhibit #12): This is a report of spectographic analysis of a sample taken by Mr. Prindle in 1954 from the bottom of the 150-foot shaft. This report shows an indication of cobalt along with the other minerals. The deposit here as indicated is not nearly so good as the 400-foot shaft but will not pass without further exploration.

(3) At the upper tunnel: Samples taken from this tunnel did not indicate the presence of cobalt. However, other mineralization is indicated and further explorations are planned. This tunnel only reached a penetration of 112 feet and was not far below the surface; no shafts nor drifters were made. The two samples taken were as follows:

I Sample No. S-1100 (Exhibit #13): Two distinct veins were encountered in this tunnel; one at approximately 80 feet and one at approximately 100 feet from the portal. The spoils from these two veins were kept in separate piles. This sample was taken at random from the pile of material from the vein at 80 feet. The presence of cobalt is not indicated.

II Exhibit #14: Is only a continuation of the report on Sample S-1100, above.

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III Sample P-22060 (Exhibit #15): Is a report of assay on Sample S-1100. We were not satisfied with the spectrographic analysis report and had a check by assay.

IV Sample S-1101 (Exhibit #16): This sample was taken at random from the pile of material from the vein at 100 feet. The presence of cobalt was not indicated.

(4) Miscellaneous: Sample S-1102 (Exhibit #17) was taken from an outcropping northerly from the Blue Quartz claim. The report does not indicate the presence of cobalt but is here included as it was taken.

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GEOLOGIC REPORT ON THE PRINDLE MINING COMPANY PROPERTY

(g) The Prindle Mining Company property of Grant County, Oregon lies just south of Dixie Butte near the headwaters of the South Fork of John Day River. The property consists of seven lode claims (Dixie No. 1, Dixie No. 2, Dixie Saddle, Jack Pot, Red Wing, Protection, and Blue Quartz) located all in Sec. 29, T 11 S, R 34 E, W. M., except for a corner of the Dixie No. 1 which extends into Sec. 30. The area lies in the heart of the Blue Mountains, a belt of complexly folded and faulted rocks of Paleozoic and Mesozoic age flanked and partly overlain by Tertiary lavas and sediments.

Very little geologic work has been done in the area since Lindgren's work in the late 1800's. The area is described as the Quartzburg District in his "Gold Belt of the Blue Mountains of Eastern Oregon", published in the 22nd Annual Report of the U. S. Geological Survey in 1901. In 1956 Thayer of the U. S. Geological Survey published geologic maps on three nearby quadrangles, but the nearest of these is still many miles from the Prindle property. The writer has so far made only a cursory reconnaissance of the area. The geologic formations shown on the accompanying map have been tentatively identified in the field and the workings described elsewhere in the report have been inspected. An intensive mapping program is planned for this coming season.

According to Thayer's stratigraphic sequence and sections the earliest identifiable rocks are a series of Permian sediments and pyroclastics now metamorphosed to

greenstones. These were intruded in Triassic times by gabbros and lamprophyres, during a period of intense deformation. The resultant mountains were eroded down and covered by Triassic sediments which in an ensuing orogeny were converted to graywackes and slates. During this orogeny the rocks were intruded by large bodies of quartz diorite. Subsequent erosion produced Cretaceous conglomeratic sandstones, following which a late Cretaceous orogeny (Laramide) mildly deformed the area. During this orogeny the existing rocks were intruded by porphyritic diorite and hornblende-rich dikes. These caused little or no alteration of the intruded rocks and apparently no mineralization. The area was subsequently blanketed by Tertiary sediments, pyroclastics and lavas and subjected to strong faulting in late Pliocene time.

The main mass of Dixie Butte is believed to be a group or a single intrusive of porphyritic diorite of late Cretaceous age. On the north side of Dixie Butte the porphyritic diorite rests directly upon gneissic diorite of much greater age. Some copper sulphide mineralization on the north end of the Red Wing claim is evidenced by quartz float stained with limonite and malachite. Mineralization by veins is certain on the Dixie No. 1 and No. 2 claims and is strongly suspect, on the basis of an assay report, at the main shaft on the Red Wing claim. The strong easterly trend of the veins has been taken advantage of in laying out the claims.

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3. ACCESSIBILITY OF PROJECT

(a) The person who will meet the DMEA representative to examine the property is:

Mr. A.C. McCollister
4201 N.E. 19th Ave.
Portland, Oregon
(Tel. ATlantic 4-0204)

To reach the property from John Day, Oregon: Go easterly on U.S. Hwy. 26, 12 miles thru Prairie City and on 9 miles to Dixie Summit Cafe; take Dixie Butte Rd. northerly approximately 5 miles, then take road forking to left and posted Dixie Meadows. On this fork to Dixie Meadows it is approximately 1 mile to Dixie Mt. saddle, the scene of operations. Once on the saddle the various operations can easily be located from the map accompanying this application.

The six miles from U.S. Hwy 26 is mountain road, quite steep and narrow in places. Transportation to the operations last summer was made mostly by sedan but with very careful driving. Use of a pickup truck or other high-clearance vehicle is recommended. Once on Dixie Mt. saddle the access to the various points of operation can be made by motor vehicle. The roadway to Dixie Mt. is usually impassible from late fall until quite late in the spring due to snow drifts.

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(b) Shipping Points: The nearest railhead from Prairie City is at Baker, Oregon, a distance of 81 miles. Commercial auto freight lines serve the John Day-Prairie City area to any point desired. Commercial bus transportation is available.

Supply Points: Most materials, supplies and equipment not on hand and that will be required will be available at either Prairie City or at John Day. However, as Portland, Oregon is the headquarters of this corporation, much of the supplies and equipment will be mobilized from there.

Employees: The principals of this corporation will themselves perform and/or supervise in lead positions. Specialized labor may be obtained from known sources in the Portland area and other help will be hired locally, as needed, from the Prairie City and John Day areas. During operations headquarters will be at the scene of operations, however, the organization as planned with present places of residence is as follows:

Field Project Management:

A. C. McCollister
4201 N.E. 19th Ave.
Portland, Oregon

Explorations and Equipment Management

L. T. Forman
Boring, Oregon.

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

Mining Management:

F. A. Prindle
2444 Prater Way
Sparks, Nevada.

Engineering and Administration:

D. L. Harshberger
4880 S.W. 145th Ave.
Beaverton, Oregon.

Geology:

Paul Howell
Troutdale, Oregon

Accounting:

J. O. Holeman
3540 S.W. 87th Ave.
Portland, Oregon.

Portland, Oregon is approximately 315 miles from the property. Sparks, Nevada is approximately 480 miles from the property.

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4. THE EXPLORATION PROJECT:

(a) The proposed project consists of 3 items of work which are, in their order of importance, (1) opening the old caved-in shaft, (2) deepening the 400-foot shaft of the lower tunnel, and (3) drill 11 core-drill holes. It is planned to do items 2 and 3 similtaneously. Refer to the plan accompanying this application.

(1) Opening the old caved-in shaft:

The purpose is to get to the bottom of the old shaft by the simplest and most expeditious methods. The plan is to remove 30 feet of overburden from over the shaft by bulldozer. The overburden will be removed to uncover the perimiter of the shaft and leave the surrounding ground on an approximate 1:1 slope. The log cabin shelter will of course be removed first. A 3/4 cu. yd. capacity, crawler type machine with a clam shell bucket will be employed to re-excavate the shaft. A salvaged 48" dia. corrugated iron pipe will then be lowered into the shaft, as shoring, and within which the bottom of the shaft will be explored to prove the presence of the 1.82% cobalt ore. If the ore proves to be present proper mining proceedures would be employed to follow up. Item 3 is planned to include core drilling for proving extent of any deposit.

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(2) Deepening the 400-foot shaft of the lower tunnel:

This existing, 15-foot shaft, has been well sampled and shows the most promise of possibly producing profitable ore. The plan is to deepen the shaft following on the slope of the 6-foot vein. The shaft will be 6.5 ft. by 12 ft. providing a hoisting compartment and a ladder and duct compartment. A penetration of 300 feet below the tunnel floor is planned. The material from this excavation will be milled if it proves economical to do so.

(3) Core Drilling Operations:

Eleven drill holes are planned; 3 at the old caved-in shaft, 5 in the vicinity of the lower tunnel and 3 in the vicinity of the upper tunnel. All holes will be drilled to a penetration of 300 feet and all will angle toward the slope of the veins. The drill machine will be gasoline-driven and will have a hydraulic feed. The drill steel will be either BX or AX and diamond bits will be used.

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(b) Access to the scenes of Items 1 and 2 will be by way of the existing roads. The existing roads will need some dozer work to widen a few dangerously narrow places, to remove some of the deepest ruts, and to round a few of the sharpest bends in the road. At two points of the road along Dixie Mt. saddle a small amount of blasting may be required to widen the narrow roadway. The access to the proposed drill holes will require a minimum amount of dozer work to grade branches from the existing access roads. All in all, the required road work will be very light grading and only improvements necessary to meet minimum requirements for moving equipment will be done. A tractor with dozer blade should be able to perform all the roadway improvements or branch construction necessary. No surfacing will be provided.

(c) It is planned to start the work on this exploration project by June 15, 1958, or as soon as access is reasonably free from snow drifts. The program is scheduled for completion in 6 months, or 150 working days. The anticipated rates of progress for each type of work is as follows:

Item No. 1 - 20 working days

Item No. 2 - (Shaft) 5 feet per day

Item No. 3 - (Drill Holes 25 feet per day.

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5. EXPERIENCE:

This corporation has just been formed and therefore has not performed any such operations as a unit. However, each of the principals are professional in their own field and the combined experiences and efforts should provide a successful operation.

The drilling operations carried on during the months of July and August of 1957 were performed by all members of this corporation working together and it is felt that the experience gained will be most beneficial in carrying out the proposed program.

A succinct description of the qualifications and/or experiences of the persons who will supervise the proposed operations are as follows:

Mr. Forman is a construction contractor and supervisor by his own profession and operates under the name of Elte Construction Company. He owns and operates many types of construction equipment in his regular operations. In our core drilling operations of last year Mr. Forman personally operated the drill machine. He will either operate the drilling machine or at least supervise the drilling operations of the proposed explorations.

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Mr. McCollister is a construction contractor and superintendant having for many years supervised all types of construction, both in military and private life operations. He has had previous core drilling experience in his services with the Corps of Engineers, U.S. Army. Mr. McCollister will act as field project manager in the proposed operations.

Mr. Prindle, previous holder of these mining claims, is a miner from "way back" and has gained much experience and wisdom in mining operations. He supervised and/or assisted in all previous tunneling and shaft work accomplished on these claims. Mr. Prindle will be in charge of the exploration by shaft excavation.

Mr. Harshberger is a construction and civil engineer of over 25 years experience, most of which has been with the Corps of Engineers. His experience includes engineering on such work as highway construction, public utilities construction, land surveys, and rivers and harbors and waterways facilities construction. All engineering will come or be supervised from this quarter.

Mr. Howell is our geologist and is associated with this corporation thru agreement. He is a graduate geologist and through post graduate work expects to gain his PHD by June of 1958. He has worked with the U.S. Corps of Engineers for many years and will provide geological

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advise and direction as required for the proposed exploration project.

Mr. John Holeman is an accountant licensed in the State of Oregon; has been a fully bonafide accountant since 1948 and worked at other accounting prior to that time. His business education was obtained in Oregon. He, of course, will provide all services pertinent to his profession.

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6. ESTIMATE OF COSTS:

ITEM NO. 1 - Opening the Old Caved-in Shaft

(a) Independent Contracts: None.

(b) Personal Services:

Superintendence, 120 Hrs. @ $5	$ 600.00
2 Laborers, 80 hrs. ea. @ $2.70	432.00
From prorated item-Project Field Manager	617.10
From prorated item-Engineering and Administration	280.50
From prorated item-Geological Services	140.25
Total personal services	$2,069.85

(c) Operating Materials and Supplies:

Wire rope, 300', 5/8" @ 35¢	105.00
Pipe, 70', 48" Cor. I.P. @ $14	980.00
" mobilization - job	140.00
Total operating materials and supplies	$1,225.00

(d) Operating Equipment:

Tractor, D-6 or equal, fully operated 72 hrs. @ $12.00 (rent)	$864.00
Mob & demob (1/2 here and 1/2 to access roads) (purchase)	150.00
Dragline Machine 1/2 c.y. cap. with clam bucket and fully operated, 48 hrs. @ $12 (rent)	576.00
Mob. & demob - Job (purchase)	400.00
Pump, 2" gas operated (1/3 here and 2/3 to Item 3)(rent)	100.00
Hose, 200 ft. @ 75¢ (1/3 here and 2/3 to Item 3) (purchase)	50.00
Service truck, 1-ton, 48 hrs. @ $5 Use also on Items 2 & 3) (rent)	240.00
Compressor, 315 cu. ft. 8 hrs. @ $5.50 (rent)	44.00
Mob. & demob. 1/5th job (purchase)	50.00
Jackhammer, 8 hrs. @ $1 (rent)	8.00
Total Operating Equipment	$2,482.00

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6. ESTIMATE OF COST (Cont'd.)

ITEM NO. 1 (Cont'd.)

(e) Initial Rehabilitation and Repairs:

Access roads - from prorated item		
Operating equipment		$61.00

(f) New Buildings, fixtures, installations:

(1) Camp Facilities - From prorated item:		
Personal services	$13.46	
Operating matl's. & supplies	6.27	
Operating equipment	170.00	$189.73

(g) Miscellaneous:

(1) Repair & maintenance of equipment included in equipment rental rates.		
(2) Spectrographs & assays 4 @ $5.60	$22.40	
(3) Workmen's Compensation	62.72	
(4) Accounting-from prorated item	170.00	$255.12

Total Estimate Item No. 1 $6,282.70

Unit Cost: 1 Job @ $6,283.40

Government's 75%	$4,712.03
Applicant's 25%	1,570.85
	$6,282.70

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6. ESTIMATE OF COST (Cont'd.)

ITEM NO. 2 - Deepening Shaft of Lower Drift:

(a) Independent Contracts: None.

(b) Personal Services:

Superintendence, 60 days @ $40	$2,400.00
Powderman, 60 days @ $22	1,320.00
2 Jackhammermen, 60 days ea. @ $22	2,640.00
2 Muckers, 60 days ea. @ $20.80	2,496.00
1 Carpenter, 60 days @ $24	1,440.00
1 Equipment Operator, 60 da. @ $24	1,440.00
From prorated item - Project Field Manager	3,630.00
From prorated item - Engineering & Administration	1,650.00
From prorated item - Geological Services	825.00
Total Personal Services	$17,841.00

(c) Operating Materials and Supplies:

Wire rope, 400 ft., 5/8" @ 35¢	$140.00
Pipe, air, 700 ft., 1½" w/fittings	450.00
Wiring, 700 ft. w/fittings	250.00
Drill bits, 40, 1¼" @ $30	1,200.00
Drill steel, 60 ft., 1", @ $1.75	105.00
Powder and caps, 3 ton @ $400	1,200.00
Lumber, 15 Mftbm @ $100	1,500.00
Hardware, 2500 lbs. @ 20¢	500.00
Pipe and fittings, water discharge, 800 ft. @ 65¢	520.00
Fuel for small items of plant, 2,000 gal. @ 40¢	800.00
Total Operating Materials & Supplies	$6,665.00

(d) Operating Equipment:

Compressor, 315 cu. ft., 3 mo. @$1000(r)	$3,000.00
Mob. & demob. (4/5 job) (purchase)	200.00
Light Plant, 1500 W., 3 mo. @ $160 (rent)	480.00
Mob. & demob. job (purchase)	100.00
Hoist, air, single drum, 3 mob. @ $200 (rent)	600.00
Mob. & demob. - job (purchase)	100.00
Dump cars, 2-8 cu. ft. and 1400 lin. ft. of rail (purchase)	1,000.00

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6. ESTIMATE OF COST (Cont'd.)

ITEM NO. 2 - Cont'd.)

Truck, 5 c.y. cap., operated, 60 days @ $44 (rent)		2,640.00
Jackhammers, air, 2, 60 days @ $2 ea. (rent)		240.00
Blasting machine (rent)		45.00
Galvanometer (purchase)		30.00
Pump, 2" electric w/suction hose (rent)		350.00
Chain Saw, gasoline operated (purchase)		350.00
Many small tools (applicant)		200.00
Total Operating Equipment		$9,335.00
(e) Initial Rehabilitation and Repair:		
Access roadways - from prorated item Operating Equipment		$363.00
(f) New Buildings, fixtures, installations:		
Camp Facilities-From prorated item		
Personal Services	$79.20	
Operating Materials & Supplies	36.87	
Operating Equipment	1,000.00	$1,116.07
(g) Miscellaneous:		
Repair & maintenance of equipment included in equipment rental rates		
Accounting-From prorated item		$1,000.00
Workmen's Compensation		708.91
Spectrographs and assays, 30 @ $5.60		168.00
Total Miscellaneous		$1, 876.91
Total Estimate Item No. 2		$37,196.98

Unit Cost: $\frac{\$37,196.98}{300}$ = $123.99 per lin. foot

Government's 75%	$27,897.74
Applicant's 25%	9,299.24
	$37,196.98

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6. ESTIMATE OF COST (Cont'd.)

ITEM NO. 3 - Core Drill Operations

(a) Independent Contracts: None.

(b) Personal Services:

Superintendent-operator, 132 da. @ $40	$5,280.00
2 Laborers, 132 days ea. @ $21.60	5,702.00
Operator, water supply truck, 132 days @ $20	2,640.00
From prorated item-Project Field Manager	3,012.90
From prorated item-Engineering & Administration	1,369.50
From prorated item-Geological Services	684.75
Total Personal Services	$18,689.15

(c) Operating Materials and Supplies:

Wire rope, 400 ft., 5/8" @ 35¢	$140.00
Rope, 1" manila, 100 ft. @ 15¢	15.00
Rope, 5/8" manila, 100 ft. @ 8¢	8.00
Pipe, valves & fittings for water supply	90.00
Fuel for pumps, water truck and drill, 3,300 gal. @ 40¢	1,320.00
Lubricants	100.00
Misc. small items	50.00
Total Operating Materials & Supplies	$1,723.00

(d) Operating Equipment:

Tractor Truck, mounting drill, 132 days @ $8 (rent)	$1,056.00
Mob. & demob. - Job (purchase)	80.00
Water Supply Truck, 132 days @ $3 (rent)	396.00
Mob. & demob. - Job (purchase)	60.00
Drill Machine, 5 mo. @ $350 (rent)	1,750.00
Drill Steel, 330 ft. @ $2.80 (purchase)	924.00
Core Barrels, 1 @ $150 (purchase)	150.00
Core Lifters, 2 @ $5 (purchase)	10.00
Bits: 5 diamond @ $180 (purchase)	900.00
5 fishtail, 2-way @ $30 (purchase)	150.00
10 inserted, tungsten carbide, @ $50 (purchase)	500.00
Reaming Shells, 2 @ $90 (purchase)	180.00
Snatch Block, 8" (purchase)	20.00
Hose, 1", high pressure, 100 ft. @ $3 (purchase)	300.00

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6. ESTIMATE OF COST (Cont'd.)

ITEM NO. 3 - (Cont'd.)

Hose, 2" suction w/foot valve & strainer (purchase)		70.00
Tanks, settling, 2-200 gal., salvage (purchase)		50.00
Tank, water storage, 500 gal. (at drill machine) (purchase)		100.00
Tank, water hauling, 500 gal. (purchase)		200.00
Tank, water storage, 500 gal. (at spring) (purchase)		200.00
Pumps, 2-2", 132 days ea. @ $2 / day (rent)		528.00
Pump, barrel (purchase)		25.00
Casing & Fittings, 40 ft. @ 80¢ (purchase)		32.00
Core Boxes, 50 @ $3 (purchase)		150.00
Misc. small tools (applicant)		150.00
Total Operating Equipment		$7,981.00
(e) Initial Rehabilitation and Repair:		
Access Roadway - From prorated item Operating Equipment		$301.29
(f) New Buildings, Fixtures, Installations:		
Camp Facilities - From prorated item		
Personal Services	$65.74	
Operating Materials & Supplies	30.61	
Operating Equipment	830.00	$926.35
(g) Miscellaneous		
Repair & maintenance of equipment included in equipment rental rates		
Accounting - From prorated item		$830.00
Workmen's Compensation		821.26
Spectrographs and assays, 55 @ $5.60		308.00
Total Miscellaneous		$1,959.26
Total Estimate - Item No. 3		$31,580.05

Unit Cost: $\frac{\$31,580.05}{3,300}$ = $9.57 per lin. foot

Government's 75%	$23,685.04
Applicants 25%	7,895.01

TOTAL EXPLORATION PROJECT - - - - - - - - $75,059.73

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6. ESTIMATE OF COST - SUPPLEMENT

ITEMS PRORATED to the Three Items of The Project

(1) Project Field Manager, 165 days @ $44 (b)			$7,260.00
(2) Engineering and Administration			
60 days @ $40		$2,400	
Travel costs 60 da. @ $15		900(b)	$3,300.00
(3) Geological Services			
30 days @ $40		$1,200	
Travel costs 30 da. @ $15		450(b)	$1,650.00
(4) Accounting during 5 mo. period (g)			$2,000.00
(5) Camp facilities: (f)			
a. Personal Services			
Carpenter, 3 days @ $24		$72.00	
2 Laborers, 32 hrs. @ $2.70		86.40	
		$158.40	
b. Materials & Supplies			
Lumber, .5 M. @ $100		$50.00	
Hardware, 15 lbs. @ 25¢		3.75	
Pipe & fittings		20.00	
		$73.75	
c. Equipment			
3 Trailer Houses, 5 mo. ea. @ $120 (rent)		$1,800.00	
Mob. & demob. job (purchase)		100.00	
1 Tank, 300 gal. (purchase)		100.00	
		$2,000.00	
Total Camp Facilities			$2,232.15
(6) Access Road Improvement (e)			
Tractor, D-6 w/dozer, 48 hrs. @ $12 (rent)		$576.00	
1/2 Mob. & Demob. (Purchase)		150.00	
Total Access Road Improvement			$726.00

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7.

(a) This corporation is prepared to furnish 25% of the cost of the explorations as they are planned in the foregoing items of this application. The 25% will be provided thru supply of materials, labor, supervision and technical services, and by cash outlay as is necessary.

The proposed exploration is of indicated sources of COBALT.

(b) The applicant's share of costs will be provided as follows:

Project Item No. 1:	
Materials	$980.00
Labor (supervision)	405.70
Technical Services	196.92
Total Item No. 1	$1,582.62
Project Item No. 2:	
Labor (Supervision)	$5,950.00
Technical Services	3,355.00
Total Item No. 2	$9,305.00
Project Item No. 3:	
Labor (Supervision)	$5,805.03
Technical Services	2,089.97
Total Item No. 3	$7,895.00
Total For Project	$18,782.62

$18,782.62 represents 25.02% of the Total Estimate.

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date August 28, 1957

Field Laboratory Number

General Laboratory Number

Spectrographic Laboratory Number S-1083

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS

(Quantities estimated to nearest power of ten)

DH3-C6

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1. Elements present in concentrations over 10%

   Silicon, aluminum

2. Elements present in concentrations 10% to 1%

   Iron, calcium, magnesium, sodium

3. Elements present in concentrations 1% to 0.1%

   Potassium, titanium

4. Elements present in concentrations 0.1% to .01%

   Lead, vanadium, barium

5. Elements present in concentrations .01% to .001%

   Zirconium, chromium, copper, strontium, cobalt, nickel, boron

6. Elements present in concentrations below .001%

Paid $5.60

Radioactivity Nil

Mercury Nil

T C Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #1

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date August 29, 1957

Field Laboratory Number _____

General Laboratory Number _____

Spectrographic Laboratory Number S-1077

Name Dean L. Harshberger

Address 4880 S.W. 145th, Beaverton, Oregon

City _____

DH-2 (C-5)

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

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DMEA
RECEIVED MAY 5 1958

DATE	INITIALS	CODE

1. Elements present in concentrations over 10%

   Silicon

2. Elements present in concentrations 10% to 1%

   Aluminum, iron

3. Elements present in concentrations 1% to 0.1%

   Magnesium, calcium, sodium potassium

4. Elements present in concentrations 0.1% to .01%

   Titanium

5. Elements present in concentrations .01% to .001%

   Manganese, chromium, vanadium, copper, barium, strontium, nickel, boron

6. Elements present in concentrations below .001%

Paid $5.60

Radioactivity Nil

Mercury Nil

T C Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #2

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Date August 28, 1957

Field Laboratory Number _____

General Laboratory Number _____

Spectrographic Laboratory Number S-1080

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

"Shaft"

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%

   Silicon, aluminum

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DMEA
RECEIVED MAY 5 1958

DATE	INITIALS	CODE

2. Elements present in concentrations 10% to 1%

   Iron, calcium, copper

3. Elements present in concentrations 1% to 0.1%

   Magnesium, sodium, titanium, cobalt, arsenic, boron

4. Elements present in concentrations 0.1% to .01%

   Potassium, manganese, lead

5. Elements present in concentrations .01% to .001%

   Zirconium, chromium, molybdenum, vanadium, silver, barium, strontium, nickel

6. Elements present in concentrations below .001%

7. Gold - Trace

Paid $5.60

Radioactivity Nil

Mercury Nil

TCMatthews
Thomas C. Matthews, Spectroscopist

Exhibit #3

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Pringle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date August 29, 1957

Field Laboratory Number _____

General Laboratory Number _____

Spectrographic Laboratory Number S-1078

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

Shaft No. 2
(Big Rock)

1. Elements present in concentrations over 10%

Silicon

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2. Elements present in concentrations 10% to 1%

Aluminum, iron, calcium

3. Elements present in concentrations 1% to 0.1%

Magnesium, sodium, potassium, cobalt, arsenic, boron

4. Elements present in concentrations 0.1% to .01%

Manganese, titanium, copper

5. Elements present in concentrations .01% to .001%

Zirconium, molybdenum, vanadium, strontium, nickel

6. Elements present in concentrations below .001%

Chromium, silver, barium

7. Gold .1 to .5 oz./ton

Radioactivity Nil

Mercury Nil

Paid $5.00

T.C. Matthews
Thomas C. Matthews, Spectroscopist

Note: Report on precious metals will follow later.

Exhibit #4

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

2033 First Street
Baker, Oregon

1069 State Office Building
Portland 1, Oregon

239 S.E. "H" Street
Grants Pass, Oregon

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

REQUEST FOR SAMPLE INFORMATION

The State law governing analysis of samples by the State assay laboratory is given on the back of this blank. Please supply the information requested herein as fully as possible and submit this blank filled out along with the sample.

Your name in full **Dean L. Harshberger**

Post office address **4880 S.W. 145th, Beaverton, Oregon**

Are you a citizen of Oregon? **Yes** Date on which sample is sent **September 4, 1957**

Name (or names) of owners of the property

Are you hiring labor? **No** Are you milling or shipping ore? **No**

Name of claim sample obtained from **Jackpot**

Location of property or source of sample (If legal description is not known, give location with reference to known geographical point.)
1 mile west of Dixie Butte

County **Grant** Mining District **Dixie Creek**

Township **12 S** Range **33 E** Section Quarter section

How far from passable road? **Close to Summer Road** Name of road **Dixie Meadows to Dixie Butte**

	Channel (length)	Grab	Assay for	Description
Sample no. 1			**Au,Ag,Co,Cu**	
Sample no. 2				

(Samples for assay should be at least 1 pound in weight)

(Signed) **Dean L. Harshberger**

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DATE INITIALS COPY

DO NOT WRITE BELOW THIS LINE - FOR OFFICE USE ONLY - USE OTHER SIDE IF DESIRED

Sample Description **Mix samples Shaft #1 and Shaft #2 together. Mix samples S-1078 and S-1080.**

Sample number	GOLD oz./T.	GOLD Value	SILVER oz./T.	SILVER Value	COPPER Cu	COBALT Co		
P-21903	0.14	$4.90	Trace	- - -	0.90%	0.29%	- - - -	- - - - -

Report issued Card filed Report mailed 9-23-57 Called for

SIR-5

Exhibit #5

A. H. HOLLAND, Pres-Treas. EDMUND E. PHILLIPS, Vice-Pres. and Gen. Mgr. M. E. HOLLAND, Secretary

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OUR MOTTO: WHAT THERE IS IN IT, NO MORE, NO LESS.

THE COLORADO ASSAYING COMPANY

(INCORPORATED)

ASSAYERS AND CHEMISTS

2013 WELTON STREET

DENVER, COLORADO, July 17, 1941.

REPORT ON DETERMINATIONS MADE FOR — Mr. F. A. Prindle,
Prairie City, Oregon.

SAMPLE MARKS	METALS	Amount per Ton Ozs.	Amount per Ton Hds.	PER CENT	Value per Ton Dollars	Value per Ton Cents
Lower tunnel grab sample from pile.	Gold		.25		8	.75
	Silver		.10			.07
	Cobalt			0.13%		

GOLD AT $35.00 PER OUNCE SILVER AT 71¢ PER OUNCE
LEAD AT _____ PER UNIT COPPER AT _____ PER UNIT

THE COLORADO ASSAYING COMPANY

By A. H. Holland
by Edmund Phillips

Exhibit #6

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

Exhibit #7

STANDARD CODES

Cable Address: "ACCURACY"

John Herman Laboratory

771 San Julian Street, Los Angeles, Calif.

TELEPHONE VAndike 6232 U.S.A. ORE TREATMENT TESTS

Certificate of Assay Qualitative Spectrographic Analysis. *Made for* Mr. F. A. Prindle,

~~giving results per ton of 2,000 pounds~~

Date January 5th, 1938.

OWNER'S MARK		Estimated Quantity					$ TOTAL
Dark	Silicon	10.0% or over.					
	Iron	10.0% or over.					
	Aluminum	10.0%					
	Boron	1.0%					
	Calcium	1.0%					
	Magnesium	1.0%					
	Copper	0.1 to 1.0%					
	Manganese and Sodium--each	0.1%					
	Lead	0.01 to 0.1%					
	Cobalt & Titanium----each	0.01%					
	Gallium and Arsenic---each	0.01%					
	Potassium	0.001 to 0.01%					
	Zinc and Vanadium-----each	0.001%					
	Tin	0.001%					
	Silver	0.0001%					

Lower tunnel 400' in Bottom of shaft.

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D M E A
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Estimated quantities to the nearest factor of ten.

I DO NOT GUARANTEE SATISFACTION -- I GUARANTEE ACCURACY

Pulps under $10 per ton may be checked by other assayers in good standing with U.S. Bureau of Mines.
If it varies over .02 ozs. gold I pay assays. If over .05 ozs. I pay $5.
Higher grades in proportion.

$ Paid.

QUOTATIONS USED AS BASIS OF CALCULATION
GOLD _____ Oz.
SILVER _____ Oz.
COPPER _____ Lb.
LEAD _____ Lb.

John Herman

ALL VALID CERTIFICATES BEAR THIS SEAL

(OVER)

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Date August 28, 1957

Field Laboratory Number

General Laboratory Number

Spectrographic Laboratory Number S-1082

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS # (40 ft.)
(Quantities estimated to nearest power of ten)

CENTRAL FILE COPY
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DATE | INITIALS | CODE

1. Elements present in concentrations over 10%
   Silicon

2. Elements present in concentrations 10% to 1%
   Aluminum, iron, calcium, sodium potassium

3. Elements present in concentrations 1% to 0.1%
   Magnesium, titanium

4. Elements present in concentrations 0.1% to .01%
   Manganese, zirconium, vanadium, copper, barium, boron

5. Elements present in concentrations .01% to .001%
   Chromium, molybdenum, strontium, nickel

6. Elements present in concentrations below .001%
   Cobalt

Paid $5.60

Radioactivity Nil

Mercury Nil

T.C. Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #8

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date August 28, 1957

Field Laboratory Number _____

General Laboratory Number _____

Spectrographic Laboratory Number S-1081

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS # (6 ft.)
(Quantities estimated to nearest power of ten)

OREGON DEPT. OF
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1. Elements present in concentrations over 10%
   Silicon

2. Elements present in concentrations 10% to 1%
   Aluminum, iron, calcium

3. Elements present in concentrations 1% to 0.1%
   Magnesium, sodium, potassium, titanium, boron

4. Elements present in concentrations 0.1% to .01%
   Manganese, zirconium, vanadium, copper, barium

5. Elements present in concentrations .01% to .001%
   Chromium, molybdenum, strontium, nickel

6. Elements present in concentrations below .001%
   Cobalt

Paid $5.60

Radioactivity Nil

Mercury Nil

T.C. Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #9

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Date August 28, 1957

Field Laboratory Number

General Laboratory Number

Spectrographic Laboratory Number S-1079

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

(Entrance)

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%

   Silicon, aluminum

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2. Elements present in concentrations 10% to 1%

   Iron, calcium, sodium, potassium

3. Elements present in concentrations 1% to 0.1%

   Magnesium, titanium, copper

4. Elements present in concentrations 0.1% to .01%

   Manganese, zirconium, vanadium, barium

5. Elements present in concentrations .01% to .001%

   Chromium, molybdenum, strontium, nickel, boron

6. Elements present in concentrations below .001%

Paid $5.60

Radioactivity Nil

Mercury Nil

T C Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #10

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES.
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date August 28, 1957

Field Laboratory Number

General Laboratory Number

Spectrographic Laboratory Number S-1086

Name Dean L. Harshberger

Address 4880 S.W. 145th

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

Mixture of four mine samples

1. Elements present in concentrations over 10%

Silicon

2. Elements present in concentrations 10% to 1%

Aluminum, iron, calcium

3. Elements present in concentrations 1% to 0.1%

Magnesium, sodium, potassium, titanium, copper

4. Elements present in concentrations 0.1% to .01%

Zirconium, vanadium, barium, cobalt, arsenic, boron & manganese

5. Elements present in concentrations .01% to .001%

Lead, chromium, molybdenum, strontium, nickel

6. Elements present in concentrations below .001%

Silver

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DATE	INITIALS	CODE

Paid $5.60

Radioactivity Nil

Mercury Nil

T C Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #11

LABORATORY REPORT

ABBOT A. HANKS, INC.

ENGINEERS, ASSAYERS, CHEMISTS, METALLURGISTS
CONSULTING - TESTING - INSPECTING

ESTABLISHED 1866
624 SACRAMENTO STREET
SAN FRANCISCO 11, CALIFORNIA
TELEPHONE GARFIELD 1-1697

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

Lab. No. 73275

Date October 1, 1954

Submitted by F. A. Prindle
843 West 6th Street
Reno, Nevada

Sample Mark No. 1

QUALITATIVE SPECTROGRAPHIC ANALYSIS
Metals Found
and Estimated Percentage Range

Less than .03%	.03% to .30%	.30% to 3%	3% to 30%	30% to 100%
Strontium Vanadium Chromium Nickel Cobalt Zinc Lead	Potassium Titanium Manganese Copper Boron	Calcium Magnesium Sodium	Silicon Aluminum Iron	

Bottom of First Shaft
Lower Tunnel.

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DATE	INITIALS	CODE

Remarks

RESPECTFULLY SUBMITTED,
ABBOT A. HANKS, INC.

By [signature]
Spectro-Chemist

bob

FORM A-5

Exhibit #12

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date September 19, 1957

Field Laboratory Number _____

General Laboratory Number _____

Spectrographic Laboratory Number S-1100

Name Dean L. Harshberger

Address 4880 S.W. 145th Avenue

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

Sample

Up - white

1. Elements present in concentrations over 10%

   Silicon

2. Elements present in concentrations 10% to 1%

   Aluminum, iron, calcium, sodium, potassium

3. Elements present in concentrations 1% to 0.1%

   Titanium

4. Elements present in concentrations 0.1% to .01%

   Manganese, boron

5. Elements present in concentrations .01% to .001%

   Zirconium, chromium, molybdenum, vanadium, copper, barium, strontium, nickel

6. Elements present in concentrations below .001%

   - - - - - - -

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DATE	INITIALS	CODE

Radioactivity Nil

Mercury Nil

(Paid - $5.60)

T C Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #13

September 26, 1957

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

1069 State Office Building
Portland 1, Oregon

Sample submitted by Dean Harshberger
4880 S.W. 145th
Beaverton, Oregon

Sample received on

Analysis requested Report on precious metals

Analysis by: J Chatters

Lab. No.	Sample Marked	Results of Analysis	Remarks
S-1100	Up-white	Gold - Trace Platinum metals - Nil	We ran this sample for precious metals since this looked the most promising.

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DATE	INITIALS	CODE

The Department did not participate in the taking of this sample and assumes responsibility only for the analytical results.

Exhibit #14

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

2033 First Street
Baker, Oregon

1069 State Office Building
Portland 1, Oregon

239 S.E. "H" Street
Grants Pass, Oregon

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

REQUEST FOR SAMPLE INFORMATION

The State law governing analysis of samples by the State assay laboratory is given on the back of this blank. Please supply the information requested herein as fully as possible and submit this blank filled out along with the sample.

Your name in full D. L. Harshberger

Post office address 4880 S.W. 145th, Beaverton, Oregon

Are you a citizen of Oregon? _____ Date on which sample is sent October 1, 1957

Name (or names) of owners of the property Government land

Are you hiring labor? no Are you milling or shipping ore? no

Name of claim sample obtained from Dixie #2

Location of property or source of sample (If legal description is not known, give location with reference to known geographical point.)

County Grant Mining District _____

Township 11 S. Range 34 E. Section 29 Quarter section _____

How far from passable road? close Name of road Dixie Butte

	Channel (length)	Grab	Assay for	Description
Sample no. 1			Cu,Co,Au,Ag	
Sample no. 2				

(Samples for assay should be at least 1 pound in weight)

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 5 1958

(Signed) D. L. Harshberger

DO NOT WRITE BELOW THIS LINE - FOR OFFICE USE ONLY - USE OTHER SIDE IF DESIRED

Sample Description Siliceous metavolcanic rock with disseminated pyrite.

Sample number	GOLD oz./T.	GOLD Value	SILVER oz./T.	SILVER Value	COPPER Cu	COBALT Co		
P-22060	Trace	- -	Trace	- -	Trace	Nil	- - -	- - -

Report issued _____ Card filed _____ Report mailed 10-16-57 Called for _____

SIR-5

Exhibit #15

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date September 19, 1957

Field Laboratory Number _____

General Laboratory Number _____

Spectrographic Laboratory Number S-1101

Name Dean L. Harshberger

Address 4880 S.W. 145th Avenue

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

Sample

Up - black

1. Elements present in concentrations over 10%

   Silicon, aluminum

2. Elements present in concentrations 10% to 1%

   Iron, magnesium, calcium, sodium, potassium

3. Elements present in concentrations 1% to 0.1%

   Titanium

4. Elements present in concentrations 0.1% to .01%

   Manganese, boron

5. Elements present in concentrations .01% to .001%

   Zirconium, chromium, molybdenum, vanadium, barium, strontium, nickel, copper

6. Elements present in concentrations below .001%

   - - - - - - -

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Radioactivity Nil

Mercury Nil

(Paid - $5.60)

T C Matthews
Thomas C. Matthews, Spectroscopist

Exhibit #16

GOVERNING BOARD
MASON L. BINGHAM, CHAIRMAN, PORTLAND
NIEL R. ALLEN, GRANTS PASS
AUSTIN DUNN, BAKER

FIELD OFFICES:
2033 FIRST STREET
BAKER
239 SOUTHEAST "H" STREET
GRANTS PASS

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 STATE OFFICE BUILDING
PORTLAND 1

Date September 19, 1957

Field Laboratory Number

General Laboratory Number

Spectrographic Laboratory Number S-1102

Name Dean L. Harshberger

Address 4880 S.W. 145th Avenue

City Beaverton, Oregon

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

Sample No - OC

1. Elements present in concentrations over 10%

   Silicon, aluminum

2. Elements present in concentrations 10% to 1%

   Iron, calcium, sodium, potassium

3. Elements present in concentrations 1% to 0.1%

   Magnesium

4. Elements present in concentrations 0.1% to .01%

   Manganese, titanium

5. Elements present in concentrations .01% to .001%

   Zirconium, chromium, molybdenum, vanadium, barium, strontium, nickel

6. Elements present in concentrations below .001%

   Copper

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

Radioactivity Nil

Mercury Nil

(Paid - $5.60)

Thomas C. Matthews, Spectroscopist

Exhibit #17

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Washington 25, D. C.

January 31, 1959

To: Docket for Docket

Subject: Withdrawal of Pending DMEA Applications

Effective this date, this pending DMEA application is considered withdrawn for statistical purposes.

If, at a later date, the applicant requests reconsideration under the OME program, all pertinent material in the DMEA file should be transferred to the new OME docket.

Frank E. Johnson
Frank E. Johnson
Acting Director

See our letter of 4/10/59
WSM

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
4/9	Holt	400
4/9	Martin	400
4/9	Selfridge	120
		110
4/10	C	225
4/10	WSM	400

APR 10 1959

Mr. B. L. Harshberger
Executive Vice-President
Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Re: Docket No. DMEA 5006 - Cobalt
Prindle Mining Company
Dixie Mt.
Grant County, Oregon

Dear Mr. Harshberger:

Your letter of April 7, 1959, requests that we hold the subject DMEA application for consideration at a later date.

Under present circumstances however, unless and until we receive an OME application, properly signed and prepared as outlined in our letter of January 29, 1959, we can only treat your DMEA application of April 15, 1958, as withdrawn and place it in our inactive files.

If the results of the exploration which we note you plan to perform during the coming summer should lead you to submit an OME application, you can then refer to the subject application by number and it will not be necessary to repeat any data already provided.

Sincerely yours,

(signed) FRANK E. JOHNSON
Acting Director

WSMARTIN:foc
4-9-59
cc to: Code 400
Director's Read. File
FT. REG. I
J. H. Bilbrey, USBM
T. H. Kiilsgaard, USGS

43683

PRINDLE MINING COMPANY
P.O. Box 315
Beaverton, Oregon

April 7, 1959

United States
Department of the Interior
Office of Minerals Exploration
Washington 25, D. C.

Re: Docket No. DMEA-5006-Cobalt
Prindle Mining Company
Dixie Mt.
Grant County, Oregon

Gentlemen:

Reference is made to your letters of January 29, 1959 and March 9, 1959 regarding action to make our DMEA application eligible for consideration under OME regulations.

The information which you have requested concerning the possibility of making a worthwhile discovery on our property has not been available through the winter. We plan to perform necessary exploration on our own this coming summer to obtain the information required.

We appreciate your cooperation in this matter and desire that our application be held for consideration at a later date.

Very truly yours,

D. L. Harshberger

D. L. HARSHBERGER
Executive Vice President

OFFICIAL FILE COPY
O. M. E.
RECEIVED APR 9 1959

DATE	INITIALS	CODE
4-9	C	220
4/9	WSM	400

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
3/6	Holt	400
3/6	Martin	400
3/9	Selfridge	20
		110
3/10		225
		400

MAR 9 1959

Mr. B. L. Harshberger
Executive Vice-President
Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Re: Docket No. DMEA 5066 - Cobalt
Prindle Mining Company
Mixie Mt.
Grant County, Oregon

Dear Mr. Harshberger:

Reference is made to our letter of January 29, 1959, regarding action required to make your DMEA application eligible for consideration under the OME regulations.

We wish to cooperate with you in allowing ample time to complete such action; but, if we do not hear from you within 30 days from the date of this letter, we will assume that you are no longer interested in proceeding with your application, and we will consider it as having been withdrawn.

Sincerely yours,

(signed) FRANK E. JOHNSON

Acting Director

WSMARTIN:foc
3-6-59
cc to: Code 400
Director's Read. File
FT. REG. I
H. W. Davis, USBM
T. H. Kiilsgaard, USGS

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
1-16	Holt	400
1-16	Martin	400
1/22	Selfridge	120
		~~440~~
		~~400~~
1/30	C	225
		400

JAN 29 1959

Mr. D. L. Harshberger
Executive Vice-President
Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Re: Docket No. DMEA 5006 - Cobalt
Dixie Mt.
Grant County, Oregon

Dear Mr. Harshberger:

Enclosed is a copy of the new Office of Minerals Exploration regulations prescribing the manner for obtaining and conditions governing Federal assistance in financing mineral exploration. Also enclosed, in accordance with the letter to you of September 2, 1958, from DMEA which has been succeeded by the Office of Minerals Exploration, are five copies of application, MME Form 40.

As you were informed by letter of August 15, 1958, DMEA, on the basis of the information then available in Washington, would have been unable to approve an exploration project on your property.

After carefully reading the OME regulations and application form, if you desire to apply for Federal financial assistance under this program, it will be necessary for you to submit additional information indicating the possibility of making a worthwhile discovery; otherwise we will be unable to approve any assistance based upon the information now at hand.

Please note that under the new program the Government can contribute no more than fifty (50) percent of the total allowable costs of the exploration specified in a contract if one should be approved.

Also, please note that your signature on the new form certifies that you would not ordinarily undertake the proposed exploration at your sole expense under current conditions or circumstances. The information requested in Item 1(a) and 1(c) if applicable—is used to determine your financial eligibility under the new exploration program. Data submitted with your DMEA application need not

41681

be repeated in the CNM application, but should be revised or supplemented as necessary.

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

Sincerely yours,

Frank E. Johnson (for)

Acting Director

Enclosures

WSMARTIN:foc 1-16-59
cc to: Code 400
Director's Read. File
FT. REG. III (2)
~~William x McBuffy, USBM~~
H. W. Davis, USBM
T. H. Kiilsgaard, USGS

9-4-58

Mr. Harshberger in to see Mr. Martin regarding the status of his brother's application Docket No. DMEA 5006 - Cobalt, Prindle Mining Company, Beaverton, Oregon.

(Mr. Harshberger employed by Public Roads)

9/22

Talked to PEJ - we will wait till regulations and forms are approved before sending copies as offered in our letter of Sept. 2 to the applicant.

WSM

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-2	Martin	400
9/2	Selfridge	420
"	Johnson	110
"	Mittendorf	100
9/3	C O	220
		225

SEP 2 1958

Mr. D. L. Harshberger
Executive Vice President
Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Re: Docket No. DMEA 5006 - Cobalt
Dixie Mt.
Grant County, Oregon

Dear Mr. Harshberger:

Your letter of August 26, 1958, offers to provide further information concerning the reference property upon our request and direction.

It is true the legislation discussed in the news release of June 6, 1958, which we sent to you, has been enacted and approved by the President. The applicable regulations, however, have not yet been promulgated, but will be sent to you when available.

A new application form to suit the proposed new regulations will be sent to you at the same time. That form will detail the information which we require. We are also adding your name to our list of those that have requested consideration of their applications under the new legislation.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

WSMartin:foc
9-2-58
cc to: Code 400
Admr. R. File
FT. REG. I
Messrs. H.W. Davis, USBM
T. H. Kiilsgaard, USGS

8623

ORIGINAL FILE COPY
DMEA
RECEIVED 29 195
BY
829 C 220
823 WSM 400

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon

August 26, 1958

United States Dept. of The Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA 5006-Cobalt
Dixie Mt.
Grant County, Oregon

Gentlemen:

Reference is made to your letter of August 15, 1958 with the information that you were unable to process our application for exploration assistance prior to June 30, 1958. The enclosure with your letter states that, if proposed legislation is enacted, applications not acted upon by June 30 would thereafter be considered for processing at the request of the applicant.

It is understood the legislation has been enacted and approved by the President. We hereby request that our application be considered for processing.

You indicate that our application lacks information concerning our property. Such information will be readily furnished, if possible, upon your request and direction.

We wish to thank you for your considerations and we hope that our application can lead successfully to a contract.

Very truly yours,

D. L. Harshberger

D. L. Harshberger
Exec. Vice President.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-11	Holt	400
8-11	Chapman	400
8/15	Selbrede	130
8/15	Vogel	130
8/15	Nelson	130
"	Johnson	110
"	Stockendorf	108
		220

AUG 15 1958

Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Re: Docket No. DMEA 5006 - Cobalt
Dixie Mt.
Grant County, Oregon

Gentlemen:

We regret that we were unable to completely process your application for exploration assistance prior to June 30, 1958, the termination date for approving new contracts, as announced by the enclosed copy of a news release of June 6, 1958.

However, had the processing been completed, we would have been unable to approve a project based on the information available to us in Washington concerning your property.

We wish to thank you for your interest in the DMEA program and for bringing the exploration plan to our attention.

Sincerely yours,

S. S. McBirney (for)

Administrator

Enclosure

TLCHAPMAN/dlm 8-11-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. Hubert W. Davis, USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-11	Holt	400
8/11	Chapman	400
		110
		100

August 11, 1958

MEMORANDUM

To: Administrator, DMEA

From: Division of Iron and Ferro-Alloys, DMEA

Subject: Denial of the subject application for exploration assistance in the amount of $75,059.73
Docket No. DMEA 5006 - Cobalt
Prindle Mining Company
Dixie Mt.
Grant County, Oregon

The processing of this application was not completed prior to June 30, 1958. However, had the processing been completed, we would have been unable to recommend a project based on the information available to us in Washington concerning the property.

The above-noted property was the subject of a request dated April 15, 1958, for exploration assistance, at an estimated cost of $75,059.73 for rehabilitation of a 93 foot shaft, deepening a 15 foot winze to 300 feet and diamond drilling holes.

A field examination of the property was made on June 5, 1958, by Howard F. Albee, Geological Survey, and G. G. Waddell, Bureau of Mines, accompanied by Frank A. Prindle, president of the company and Leroy T. Foreman, vice-president.

Applicant: Prindle Mining Company
Box 315
Beaverton, Oregon

Property Ownership: The property consists of seven unpatented lode mining claims located by Frank A. Prindle, and the quit-claimed to Prindle Mining Company, Inc. The claims are located in sections 29 and 30, T. 11 S., R. 34 E., Williamette meridian, Quartzburg Mining District, Grant County, Oregon, and are recorded as follows:

8623

Claim Name	Book No.	Page No.
Blue Quartz	V	407-8
Protection	R	212
Red Wing	R	137-8
Jack Pot	R	195-6
Dixie Saddle	T	15
Dixie No. 1	T	15
Dixie No. 2	T	16

Geology: The area lies within the Blue Mountains, a belt of complexly folded and faulted rocks of Paleozoic and Mesozoic age, flanked and partly overlain by Tertiary lavas and sediments.

The dominant rocks of the district are meta-andesite, meta-diabase, and related volcanic rocks, including tuff, associated with small amounts of argillite. Intruded into these rocks are various plutonic rocks, including gabbro, serpentine and diorite.

Mineralization occurs along fault zones and in places consists of heavy sulphides. Some cobalt occurs in small isolated pods. No true veins are formed in the fault areas.

Past History and Production:

Development in the district dates back to the late 1800's; however, the main interest was in gold and copper. The largest mine in the area is about 2½ miles southwest of the Prindle claims and is producing gold, copper and some cobalt. All exploration on the Prindle property was for gold and most of it was done prior to 1900.

Development:

The underground workings consist of any upper adit, about 155 feet and a lower adit approximately 904 feet. In the lower adit a 35 foot winze was sunk at a point 160 feet from the portal, and at 370 feet a 15 foot winze was sunk. A shaft (caved) about 2,500 feet east of the lower adit is reported to be 93 feet deep. There are a number of other shallow workings on the property. Three diamond drill holes with a total of 305 feet were drilled to intersect the mineralization reported in the shaft. The drilling was fruitless.

Ore Values
and Tonnage: There is no measurable ore on the property. Eleven samples show the following results:

Sample No.	Width ft.	Ozs. Au.	% Copper	% Cobalt
GGW3E	--	0.36	0.04	0.51
344C	10.0			0.02
345C	2.2			Tr.
346C	1.8			Tr.
347C	1.4			0.02
348C	3.0			0.02
349C	3.4			Tr.
350C	6.0			0.02
351C	2.0			0.02
352C	3.0			0.02
353C	3.0			Tr.

Conclusions and
Recommendations:

The examining team concludes that cobalt occurrences are most likely confined to small isolated pods, with some of the pods being high grade, but that the probability of finding any significant ore deposit is poor, and recommends denial. The Field Team concurs in this conclusion.

The Commodity Divisions of the Geological Survey, and the Bureau of Mines, concur in the conclusions and recommendations of the examining team and the Field Team.

Thos. L. Chapman

TLCHAPMAN/dlm 8-11-58
cc to: Code 400
Admr. R. File
Oper. Comm.
Code 110

for W. S. Martin, Director
Division of Iron and Ferro-Alloys

CENTRAL FILE COPY
DMEA
AUG 12 1958
INITIALS | CODE
8/13 W.J. 225
400

IN REPLY REFER TO:

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

August 12, 1958
Re: DMEA 5006
Prindle Mining Co.
Prindle Claims
Grant County, Oregon
$75,059.73 - Cobalt

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of Field Team Report

The applicant requested assistance in exploring a reputed cobalt-bearing vein by rehabilitation of a caved-in shaft, deepening of a shallow winze and diamond drilling.

The request appears to rest, for the most part, on a sample reported to have been taken in 1912 at the bottom of the 93-foot shaft to be rehabilitated.

The assay certificate has long been missing, but as remembered, showed 1.82% cobalt. Thirteen spectographic analyses and 4 assay certificates also are used to support the application.

Concentrations of lead vanadium, barium zinconium, nickel, boron, manganese, titanium molybdenum, and silver in amounts less than 1.0% are shown by the spectographic work. Usually the values are less than 0.1% and many are below .01%.

One sample taken in 1957 assayed 0.90% copper and 0.29% cobalt, and one taken in 1941, showed 0.25 oz. gold, 0.10 oz. silver and 0.13% cobalt. Of 11 samples taken by the examiners, only one, a grab sample, showed above 0.02% cobalt. It also assayed 0.36 oz. gold and 0.04% copper.

It is quite evident the considerable work done on this prospect was for nought, and the recommendation of the examiners that the application be denied is most apt.

N. E. Nelson

N. E. Nelson

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

DATE	INITIALS	CODE
8/5	H.S.	225
8/7	WSM	400

August 6, 1958

Re: DMEA 5006
Prindle Mining Co.
Prindle Claims (cobalt)
Grant County, Oregon

Memorandum

To: W. S. Martin, Director, Division of Iron and Ferro-Alloys, Defense Minerals Exploration Administration

From: H. W. Davis, Branch of Ferrous Metals and Ferroalloys

Subject: Review of field examination report, DMEA 5006 (cobalt), Prindle Mining Co., Prindle Claims, Grant County, Oregon

The subject property was examined by H. F. Albee, Geologist, U. S. Geological Survey, and G. G. Waddell, Mining Engineer, Bureau of Mines, who concluded that the probability of finding a commercial deposit is poor and recommended that the application be denied. A total of 11 samples were taken in the area, but only trace amounts of cobalt were found in 10 of the samples. One select sample taken in the discovery pit assayed 0.51 percent cobalt.

I concur with the recommendation of the examiners and the Field Team that the application be denied.

H. W. Davis

H. W. Davis

Attachment

Copy to: Ferrous Metals (2)
Div. of Minerals
Thor H. Kiilsgaard, U.S.Geol.Survey
Frank D. Lamb
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 4 1958

DATE	INITIALS	CODE
8/4	J. G.	225
8/8	HB	130
8/8	C	220
		400

August 1, 1958

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-5006 (Cobalt)
Prindle Mining Company
Prindle claims
Grant County, Oregon

Dear Mr. Selfridge:

Enclosed are three copies of an examination report by Howard F. Albee, Geologist, U. S. Geological Survey, and G. G. Waddell, Mining Engineer, U. S. Bureau of Mines on the examination of the Prindle claims of the Prindle Mining Company, in Grant County, Oregon.

One selected sample taken in the discovery pit assayed 0.51 percent cobalt but 10 other samples taken on the property showed only trace amounts of cobalt and crosscutting below the original discovery did not disclose any mineralized zones. The examiners conclude that whatever cobalt occurs on the property is likely to be confined to small pods, and that the probability of finding a commercial deposit is poor.

The Field Team agrees with the examiners' conclusion and recommends that the application be denied.

By Field Team Region I

Reviewed by
DMEA OPERATING COMMITTEE
8-8-58
(date)

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

Thomas E. Howard
for: Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USBM (2)
USGS(SRO)
Albee

DMEA

ORIGINAL FILE COPY
DMEA
RECEIVED AUG 4 1958

DATE	INITIALS	CODE
8/8	2/B	130
		220

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

July 28, 1958

MEMORANDUM

To: DMEA Field Team, Region I

From: Howard F. Albee, Geologist, U. S. Geological Survey, and G. G. Waddell, Mining Engineer, U. S. Bureau of Mines

Subject: Application Examination Report, Docket No. DMEA-5006 (Cobalt), Prindle Mining Company, Prindle Claims, Grant County, Oregon

INTRODUCTION

The Prindle Mining Company, Box 315, Beaverton, Oregon, applied on April 15, 1958, for aid to explore for cobalt on the Prindle claims, Grant County, Oregon. The property consists of seven unpatented lode mining claims owned by the company by virtue of a quitclaim deed executed by Frank A. Prindle.

The property was examined June 5, 1958, by Howard F. Albee, Geologist, U. S. Geological Survey, and G. G. Waddell, Mining Engineer, U. S. Bureau of Mines. The examiners were accompanied by Frank A. Prindle, president of the company, and Leroy T. Foreman, Vice-President. About 7 hours was spent examining the property.

ON SITE EXAM

The applicant proposes to explore the property by cleaning out a caved 93-foot shaft, deepen to 300 feet a 15-foot winze in the lower adit, and diamond drill 11 holes, for a total cost of $75,059.73. The underground workings pertinent to the application consist of an upper adit of about 155 feet, a lower adit of about 900 feet, and a caved shaft which reportedly reached a depth of 93 feet. A 35-foot deep winze and a 15-foot deep winze were sunk in the lower adit (pl. 1). All of the underground workings were examined and mapped, except the two shallow winzes, which were water-filled. The applicant stated that his mineralized material was in the water-filled winzes and therefore it could not be sampled. One select sample from the applicant's discovery pit and 10 channel samples from the underground workings were taken.

Reviewed by
DMEA OPERATING COMMITTEE
8-8-58
(date)

SUMMARY AND CONCLUSION

The property is largely underlain by meta-andesite. This is the only rock type that was noted in the underground workings. No cobaltiferous material was recognized and none could be pointed out by the applicant. The geologic report in the application mentions a 6-foot wide and a 40-foot wide vein, each dipping steeply to the northwest. The faults at the southeast side of each of the shafts of the main adit (pl. 1) must certainly be what the applicant considered the respective footwalls of the veins, but no change in rock type nor in the amount of sulfide mineralization was seen on either side of the faults. A total of 10 samples were taken in this area, but only trace amounts of cobalt were found. One select sample taken in the discovery pit assayed 0.36 ounce gold per ton, 0.51 percent cobalt, and 0.04 percent copper which occurred mostly in iron sulfides. No other place on the property, including the two adits crosscutting under the discovery pit, was found to have even a slightly similar occurrence. Because extensive crosscutting in the area below the original discovery did not disclose any strong mineralized zones, it is concluded that the cobalt occurrences are most likely confined to small pods. Although the individual pods may be high grade, the probability of finding a commercial deposit is poor. The reported occurrence in the bottom of the shaft is probably another pod.

RECOMMENDATION

It is recommended that this application be denied.

LOCATION, ACCESSIBILITY AND LOCAL FACILITIES

The Prindle claims are located in secs. 29 and 30, T. 11 S., R. 34 E. Willamette meridian, Quartzburg Mining District, Grant County, Oregon. The property is accessible from John Day, Oregon, by traveling 21 miles easterly on U. S. Highway 26 to the Dixie Summit Cafe; thence follow the Dixie Butte road to the left of the highway for 0.2 of a mile, turn left and travel 4.2 miles to Wickiup Spring road sign, thence turn left, travel 1.3 miles to Dixie saddle where the shaft house of the old caved shaft can be seen at the right side of the road. The road from the Dixie Summit cafe to the property is a steep, narrow, mountainous road. Because of the deep snowfall it is open only from approximately the middle of June to late in October. Altitudes within the district range from about 3,500 feet in the John Day Valley to 7,400 feet on top of Dixie Butte, a short distance east of the property. Altitudes on the property range from approximately 6,000 feet to a little over 6,800 feet. The slopes are steep around the lower reaches of the property; however, around Dixie saddle, where most of the work is proposed, the slopes are gentle and covered by soil mantle of an undetermined thickness. At the property the climate is severe and outside work can be done only

through the summer months. Underground work could be carried on throughout the winter. The nearest power lines are 5½ miles away by road and water for extensive mining purposes would have to be hauled approximately 4 miles; however, enough water collects in the winzes to facilitate limited drilling. The claims are heavily covered with timber suitable for mining purposes. Supplies and labor are readily available at Prairie City, about 15 miles away, and at John Day, about 27 miles away. The nearest railhead is at Baker, Oregon, approximately 81 miles to the northeast. Commercial auto freight lines, however, serve the John Day-Prairie City area.

PROPERTY

History and production

Development in the district dates back to the late 1800's; however, the interest was in gold and copper. Mining in the district is largely confined to a north-trending belt lying approximately 1½ to 2 miles west of the Prindle group of claims. The largest mine in the area, the Standard mine, lies approximately 2½ miles southwest of the claims. The Standard mine is presently producing copper, gold, and some cobalt. The original work on the Prindle property started prior to 1900 and all of the exploration done up to 1957 was for gold. There has been no production from the property. Only assessment work has been performed in recent years.

Ownership

The group of seven claims was located by Frank A. Prindle (fig. 2). The Dixie No. 2 was originally located as the Black Prince claim by Thomas Toner and W. T. Walling. Upon the death of these two men Mr. Prindle located the Black Prince claim, as Dixie No. 2; he also located the six adjoining claims. Mr. Prindle, for a one-fourth interest in Prindle Mining Company, quitclaim-deeded the group of seven claims to Prindle Mining Company, Inc., on March 29, 1958. No part of the seven claims is to be excluded from this application. The claims are recorded in the Grant County Courthouse as follows:

Name	Book	Page
Blue Quartz	V	407-8
Protection	R	212
Red Wing	R	137-8
Jack Pot	R	193-6
Dixie Saddle	T	15
Dixie No. 1	T	15
Dixie No. 2	T	16

Development

The underground workings consist of an upper adit of approximately 155 feet and a lower adit of approximately 904 feet. In the lower adit, 160 feet from the portal, a 35-foot winze has been sunk, and at 370 feet, a 15-foot winze has been sunk. Both winzes are now filled with water. The tunnels are in good shape and no timbering has been necessary except at the portals where some sloughing has partly caved in the first several sets in each adit. A shaft, located approximately 2,500 feet east of the lower adit, was excavated to a reported depth of 93 feet in the winter of 1912. This shaft caved and was re-excavated in 1937 to a depth of 75 feet; subsequently, it caved again. A smaller shaft, located approximately 100 feet east of the caved shaft, was excavated to a depth of 28 feet. The only recent workings on the property is a new adit on the Protection claim (fig. 2) that reached a penetration of approximately 35 feet. This adit was started as assessment work and presumably heads toward the caved shaft. In the summer of 1957, 3 diamond drill holes totaling 303 feet were drilled in the vicinity of the caved shaft in an attempt to intersect the mineralized zone cut by the shaft. This drilling proved fruitless.

There are several old dilapidated buildings on the property and only two buildings that are usable. They are a tool shed and Mr. Prindle's cabin. The only mining equipment was an old unusable Strand single-stage horizontal compressor.

GEOLOGY

The geology of the district has been described in "Some Mining Districts of Eastern Oregon," U. S. Geological Survey Bulletin 846-A by James Gilluly, J. C. Reed, and C. F. Parks, Jr. (1933). Messrs. John Hosterman and J. S. Vhay have an unpublished report on the district. The general geology of the district has been drawn freely from these reports.

The area lies within the Blue Mountains, a belt of complexly folded and faulted rocks of Paleozoic and Mesozoic age, flanked and partly overlain by Tertiary lavas and sediments.

The dominant rocks of the district are meta-andesite, meta-diabase, and related volcanic rocks, including tuff, associated with which are small amounts of argillite. Intrusive into this series of volcanic and sedimentary rocks, and doubtless in a large degree responsible for their intense alteration, is a considerable variety of plutonic rocks among which gabbro, serpentine, and diorite are most prominent.

Most of these rocks are considerably sheared and altered, the volcanic rocks, by the development of biotite and tourmaline the intrusive rocks, by the development of talc, biotite, uralite, and tourmaline.

The Prindle claims lie approximately 1 mile west of Dixie Butte, the most prominent topographic feature in the area. The main mass of Dixie Butte is believed to be porphyritic diorite intruding the meta-andesite that underlies the property.

Approximately 1,060 feet of adit workings, all in meta-andesite, were examined and mapped. Gilluly and others state in U. S. Geological Survey Bulletin 846-A that the ore minerals occur in pockets along fine stringers in meta-andesite and that no prominent structural features seem to have localized the mineralization.

At the time of Gilluly's visit there was one such pocket containing glaucodot(?). This pocket was in the bottom of the drift and did not extend to the back. Another pocket was at the surface in a discovery cut of Dixie No. 2 claim (pl. 1). The adit was driven to connect with the supposed downward extension of the pocket at the surface.

During the examination, however, Mr. Prindle said that the pocket in the drift was located at the No. 2 winze (pl. 1) and that it did not extend to the walls or back. The No. 2 winze is at least 180 feet southeast of a downward projection of the pocket at the surface. The upper adit would have been the first to cut the projection of a structure but none is evident in that drift. The discovery cut was filled with slumped material and surrounded by a soil mantle so that bedrock could not be seen.

The lower adit passed beneath the surface cut and if the fault at Winze No. 2 is projected to the surface, the projection intersects the surface near the northern end of the discovery cut. The fault did not develop a gouge zone and is barren in the drift. Mr. Prindle stated that the cobalt comes in about half way down the No. 1 winze. The material excavated from this winze was sampled by the applicant and the assay results of one sample showed 0.29 percent cobalt and 0.9 percent copper, and of another sample showed 0.13 percent cobalt and no copper.

In the geologic report submitted by the applicant it is stated that 2 veins are cut by the lower adit -- 1 vein at Winze No. 2 is 6 feet thick and 1 vein at Winze No. 1 is 40 feet thick. Further on in the application, under the proposed exploration, the position of the veins apparently is reversed as the proposal includes deepening the No. 1 winze on the dip of the 6-foot wide vein. There was no vein material noted at either place by the examiners and the wall rock type did not change from one side of the faults to the other at either of the winzes. Mr. Prindle could give no information on the position or width of the veins. The applicant submitted the results of 8 spectrographic analyses and 2 chemical assays from the workings other than the No. 1 winze. These assays showed cobalt and copper as nil to a trace.

The examining team took 11 samples from the places shown on plate 1. These samples confirmed the low cobalt and copper assays submitted by the applicant. The assay results of these samples are as follows:

Sample No.	Length	oz Au/ton	% Cu	% Co
GGW3E (Grab)	--	0.36	0.04	0.51
344C	10.0	------not assayed----		0.02
345C	2.2	------not assayed----		Tr
346C	1.8	------not assayed----		Tr
347C	1.4	------not assayed----		0.02
348C	3.0	------not assayed----		0.02
349C	3.4	------not assayed----		Tr
350C	6.0	------not assayed----		0.02
351C	2.0	------not assayed----		0.02
352C	3.0	------not assayed----		0.02
353C	3.0	------not assayed----		Tr

The caved shaft, of course, could not be examined and the dump is largely scattered, soil-covered, and overgrown with grass. The applicant proposes, however, to re-excavate the shaft on the basis of reported assay results of 1.82 percent cobalt from a sample taken about 1912. If a deposit is found, core drilling of three holes is proposed to test its extension.

APPLICANT'S PROPOSAL & DISCUSSION

The applicant's proposed exploration project was to consist of the following:

1. Re-excavate the 93-foot vertical shaft.

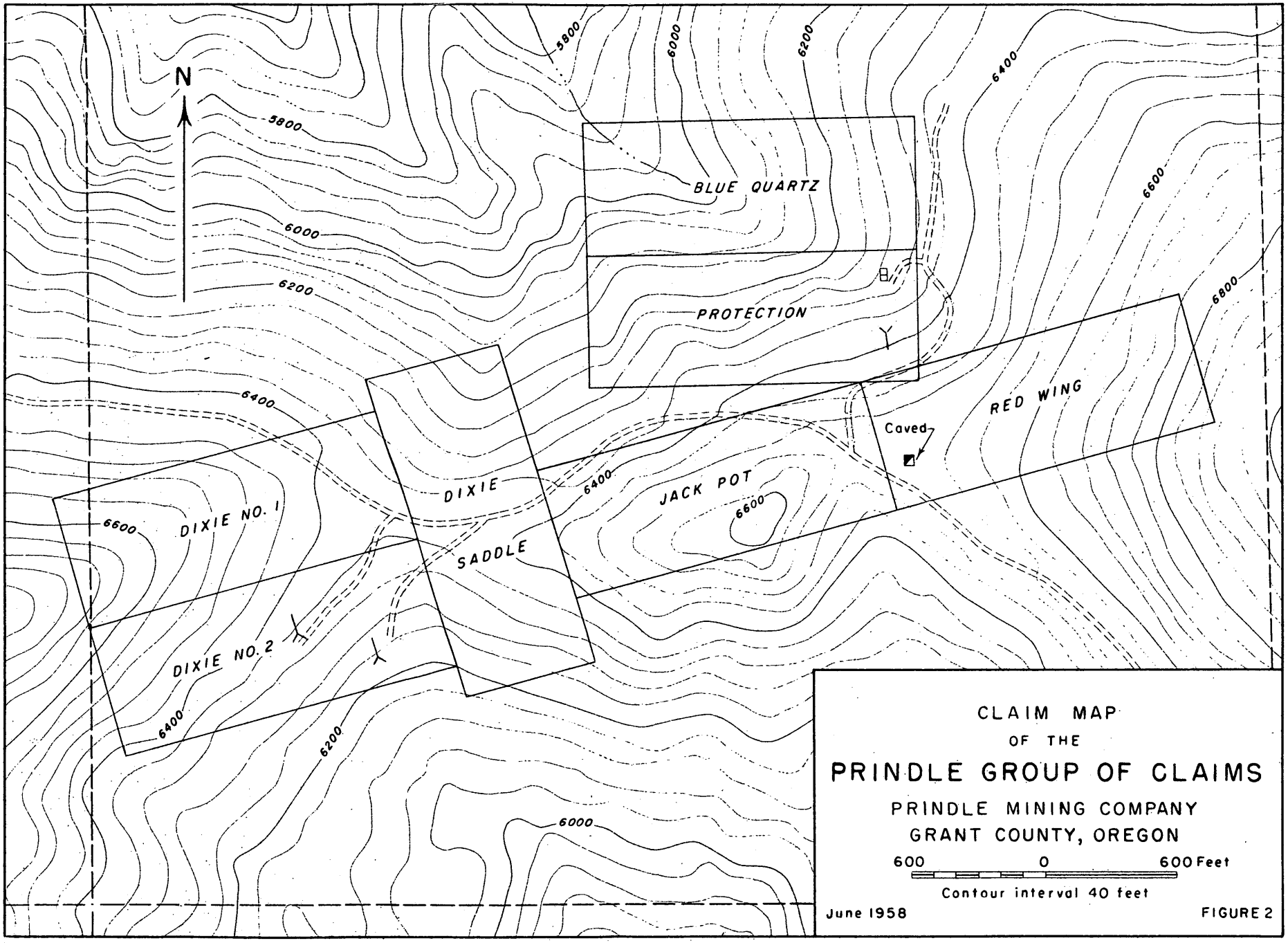
2. Deepen the present 15-foot No. 1 winze to a depth of 300 feet.

3. Core drill 11 holes each 300 feet deep for a total of 3,300 feet.

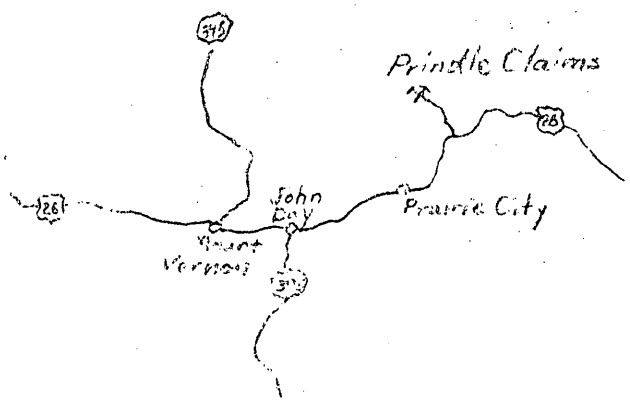
The entire operation was estimated to take 4 months and to cost $75,059.73.

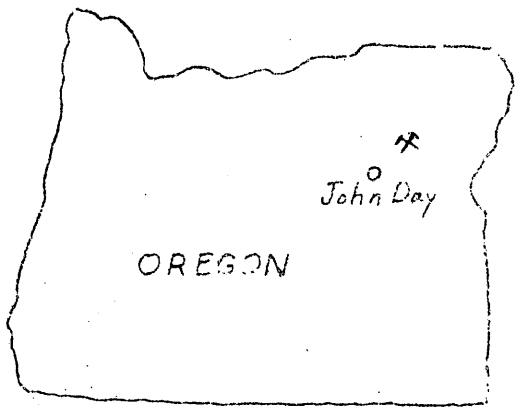
Because no exploration program is recommended, a discussion of the applicant's exploration plan is not warranted.

Attachments
Distribution:
DMEA(3)
USBM(5)
USGS(SRO)
Docket
Albee


N
5800
6000
6200
6400
6600
6800
BLUE QUARTZ
PROTECTION
RED WING
Caved
DIXIE
SADDLE
JACK POT
DIXIE NO. 1
DIXIE NO. 2
CLAIM MAP
OF THE
PRINDLE GROUP OF CLAIMS
PRINDLE MINING COMPANY
GRANT COUNTY, OREGON
600 0 600 Feet
Contour interval 40 feet
June 1958
FIGURE 2

OFFICIAL FILE COPY
DMEA
RECEIVED 1958





LOCATION MAP
OF THE
PRINDLE CLAIMS
PRINDLE MINING COMPANY
GRANT COUNTY, OREGON

June 1958 FIGURE I

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

OFFICIAL BUSINESS

XDXXXXXX-125K

YWB147 WAF SP 25 I-GS-G

SPOKANE WASH 8-1-58 1420U

W. S. MARTIN

ACTING CHAIRMAN OPERATING COMMITTEE

DMEA DEPT. OF INTERIOR WASHN., DC

REURTT AUGUST 1. REPORT RECOMMENDING DENIAL PRINDLE APPLICATION DMEA 5006 BEING MAILED TODAY. DENIAL WILL BE RECOMMENDED FOR BOTH GRANLICH MINERALS INC; DMEA 5023 AND CLARENCE R. CLIPHANT DMEA 5046. ESTIMATE THESE REPORTS CAN BE MAILED BY AUGUST 14.

A E WEISSENBORN EXECUTIVE OFFICER REGION 1

1 5006 5023 5046

VA 1422U

DMEA Form 7
(12-56)

OFFICIAL F

Date	Surname	
8-1	Martin	4
	Martin	130
8/1	Johnson	110
1	Pittenger	100
8/1	C	220
		400

AUG 1 1958

DEPARTMENT OF THE INTERIOR

DMEA

14X1401(01) Revolving Fund
Defense Production Act,
Interior (Transfer to Office of
Secretary)

T E L E T Y P E

A. E. WEISSENBORN
EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION I
SOUTH 157 HOWARD STREET
SPOKANE, WASHINGTON

REDOCKETS DMEA 5006 FRINDLE MINING COMPANY, DMEA 5023 GRANLICH MINERALS, INC., AND DMEA 5046 CLARENCE R. OLIPHANT. PLEASE TELETYPE YOUR RECOMMENDATIONS AND ADVICE WHEN WE MAY EXPECT EXAMINATION REPORTS.

W. S. Martin
ACTING CHAIRMAN, OPERATING COMMITTEE

WSMartin/izm 8-1-58
cc: Mr. Martin
Docket 5006
" 5023
" 5046
Admr.'s Reading File
Operating Committee
Hubert W. Davis, USBM
Gilbert DeHuff, USBM
THKiilsgaard, USGS
WPWilliams, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/21	Chapman	400
5/21	Martin	400
5/21	GCS	130
"	Jones	110
"	Westenberg	100
5/22	(4.5)	220
		400

MAY 21 1958

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 5006 - Cobalt
Prindle Mining Company
Dixie Mt.
Grant County, Oregon

Dear Mr. Weissenborn:

Reference is made to your letter of May 1, 1958, which stated that an examination of the above-noted property would be scheduled as soon as possible. We will, therefore, hold this application in abeyance until the report and recommendations of the Field Team are received.

Enclosed are copies of memoranda, dated May 7 and 16, 1958, by Hubert W. Davis, Bureau of Mines, and W. P. Williams, Geological Survey, respectively, with an extra copy of the application for the use of the Field Team.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (2/5)

APPROVED:

P. F. Yopes (2/5)
Member, Bureau of Mines

Thor H. Kiilsgaard (2/5)
Member, Geological Survey

TLCHAPMAN:foc 5-21-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. Hubert W. Davis, USBM
W. P. Williams, USGS

Enclosure

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/21	Chapman	400
5/21	Martin	400
5/21	Selfridge	130
5/21	Hoyt	130
5/21	R. Clagan	120
"	J. Ehrman	110
"	Fritzenson	101
5/22	H.G.	0220
		400

MAY 21 1958

Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Re: Docket No. DMEA-5066, Cobalt
Dixie Mt.
Grant County, Oregon

Gentlemen:

The application for assistance in exploring the subject property under the captioned docket number has been reviewed by the Division of Iron and Ferro-Alloys, of the Defense Minerals Exploration Administration, and has been referred to Mr. A. R. Weissenborn, Executive Officer, DMEA Field Team, Region I, South 157 Howard Street, Spokane 4, Washington, for further consideration.

The Regional office will notify you, if it has not already done so, in case additional information concerning your application is needed. Any assistance you may give the members of the Field Team will be appreciated.

Sincerely yours,

C. O. Mittendorf (400)

Administrator

TLCHAPMAN:foc
5-21-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. Hubert W. Davis, USBM
Thor Kiilsgaard, USBS

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

May 16, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 19 1958

5-19	C	220
	WSM	400

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C

Re: Docket No. DMEA-5006 (Cobalt)
Prindle Mining Company
Dixie Mt.
Grant County, Oregon

Dear Mr. Selfridge:

Enclosed is a copy of a letter dated May 14, 1958, from D. L. Harshberger, Vice President of Prindle Mining Company, together with a copy of a deed and an explanatory note on Dixie No. 2 claim.

Sincerely yours,

D. R. MacLaren
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I

Enclosures

cc: USBM (2)

PRINDLE MINING COMPANY
P. O. Box 315
Beaverton, Oregon

May 14, 1958

United States
Department of The Interior
DMEA
So. 157th Howard Street
Spokane, Washington.

DMEA-5006

Dear Sirs:

Reference is made to the telephone ~~call of~~ May 7, 1958 by Mr. McLaren to Mr. McCollister in Portland, Oregon.

There seemed to be some question as to the disposition of the Black Prince Claim once held by a Mr. Waling. We wrote to Mr. Prindle, in Sparks, Nevada, requesting any information he was able to provide. His information is inclosed. Also inclosed is a copy of the Quit Claim Deed of the seven claims from Mr. Prindle to the Prindle Mining Company. We hope these provide the information you need.

We will call you as soon as the claim area is accessable. Your interest and cooperation is greatly appreciated.

2 Incls.
1. Cpy Deed
2. Note on Dixie No. 2

Very truly yours,

D. L. Harshberger

D. L. Harshberger
Vice President
Prindle Mining Co.

RECEIVED
MAY 16 1958
U. S. G. S.
SPOKANE, WASH

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

CENTRAL FILE COPY
IN REPLY REFER TO:
DMEA
RECEIVED MAY 19 1958
5/19 C 220
WSM 400

Memorandum

May 16, 1958

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application, DMEA 5006, Prindle Mining Company, Dixie Mountain property, Grant County, Oregon (Cobalt).

The applicant proposes to explore for cobalt ore deposits on a group of 7 unpatented mining claims. The proposed project would consist of rehabilitating an old shaft, deepening an existing shaft, and diamond drilling 11 holes. Estimated total cost of the project is $75,059.

Fairly extensive old mine workings exist on the property. The applicant is now in the process of driving a new adit, mostly for assessment work. The applicant cites an old assay return which showed 1.82% cobalt. Spectographic analyses of samples taken by the applicant show the presence of cobalt but not in significant amounts.

The application is fairly well documented with geologic reports, assay certificates, and maps. The property should be evaluated through field examination. The Executive Officer, DMEA Field Team Region I, has already stated May 1, 1958, that an examination will be scheduled as soon as possible. It seems likely that the applicant's property has been examined by this date.

W. P. Williams

W. P. Williams

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

ORIGINAL FILE COPY
DMEA
RECEIVED MAY 9 1958

DATE	INITIALS	CODE
5/9	C	220
	WSM	400

May 7, 1958

Re: DMEA 5006
Prindle Mining Co.
Dixie Mountain
Grant County, Oregon
$75,060 - Cobalt

Memorandum

To: W. S. Martin, Director, Division of Iron and Ferro-Alloys, Defense Minerals Exploration Administration

From: Hubert W. Davis, Branch of Ferrous Metals and Ferroalloys

Subject: Review of Application

Applicant's proposal pertains to a loan of $75,059.73 to explore for cobalt at seven claims (locally known as the Prindle claims) on Dixie Mountain in Grant County, Oregon.

According to applicant, all previous work on these claims, except exploration drilling in 1957, was in search of gold, which was not found in sufficient quantity to warrant milling. Spectrographic analyses of samples taken by applicant do not indicate that the cobalt is of commercial grade.

Inasmuch as applicant has furnished insufficient information on which to base an opinion concerning the loan, it is recommended that the application be referred to the Field Team for its review and recommendation.

Hubert W. Davis

Hubert W. Davis

Attachment

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

May 7, 1958

Prindle Mining Company
P. O. Box 315
Beaverton, Oregon

Subject: DMEA-5006

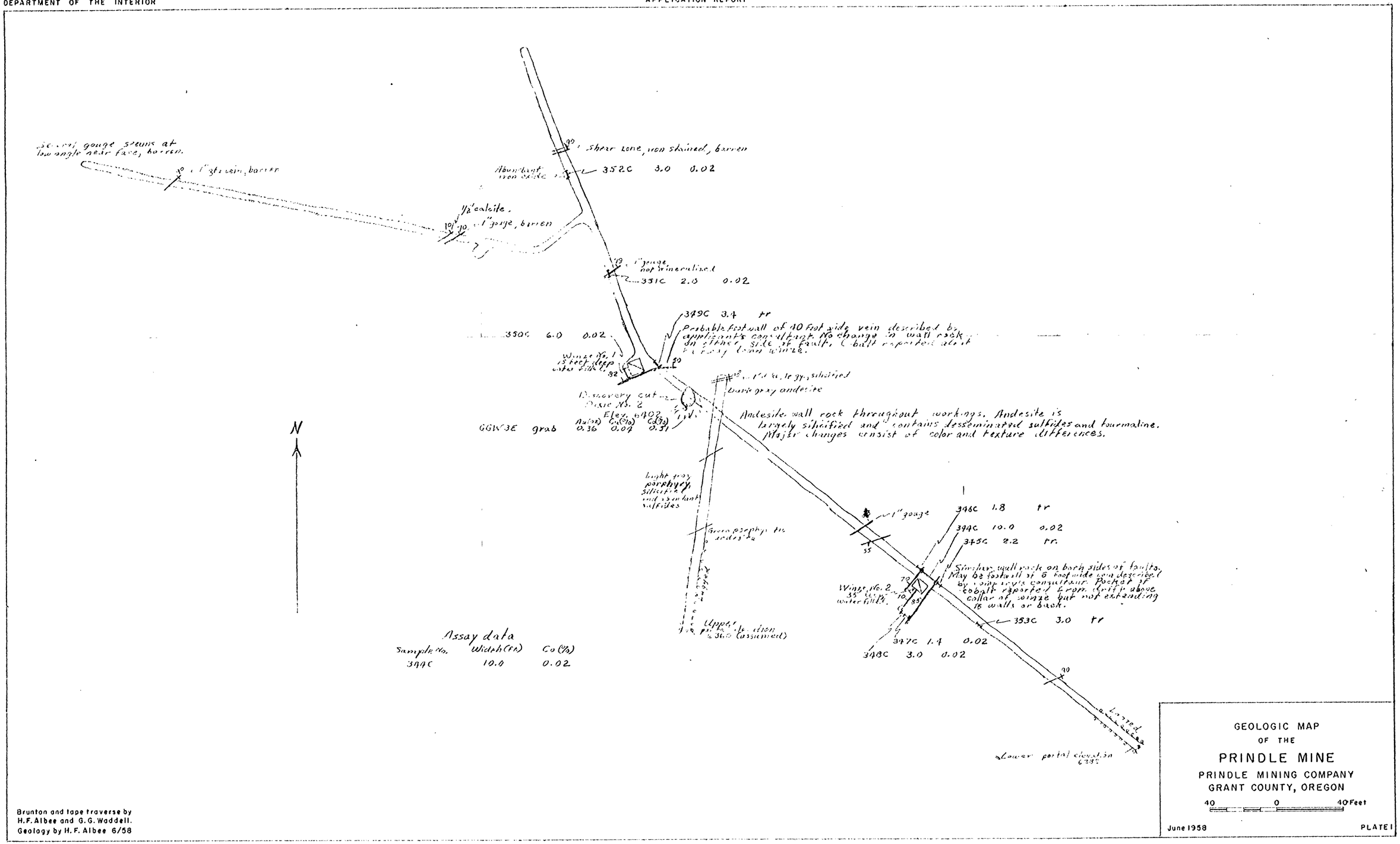
Dear Mr. Prindle:

Your application for exploration assistance, dated April 15, 1958 submitted to our office at Spokane, Washington has been assigned Docket Number DMEA-5006 and referred to the Iron & Ferro Alloys Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to: Region I



GEOLOGIC MAP
OF THE
PRINDLE MINE
PRINDLE MINING COMPANY
GRANT COUNTY, OREGON

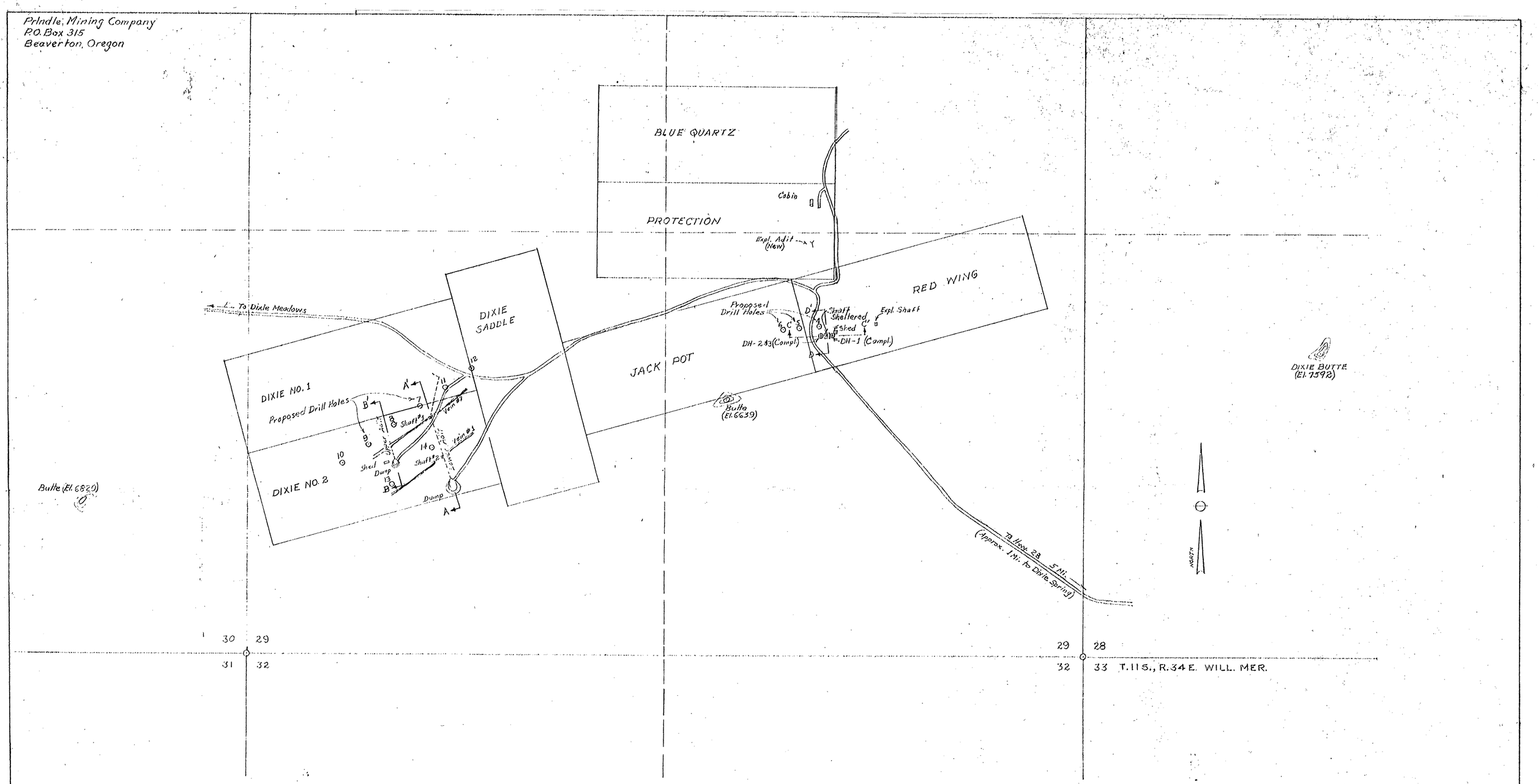
40 0 40 Feet

Brunton and tape traverse by
H.F. Albee and G.G. Waddell.
Geology by H.F. Albee 6/58

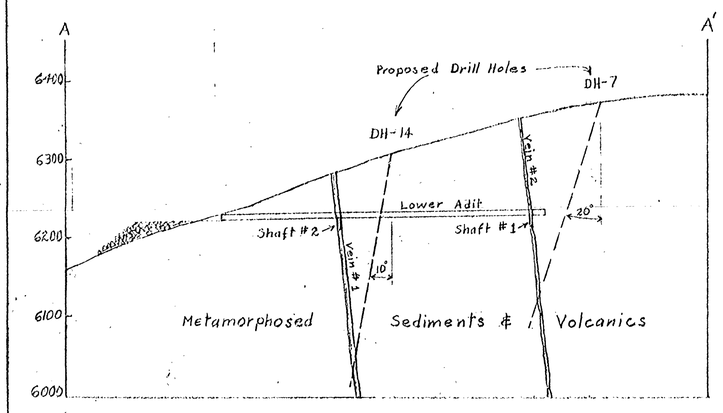
June 1958

PLATE I

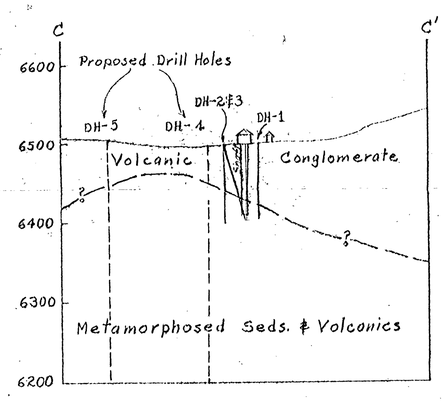
Prindle Mining Company
P.O. Box 315
Beaverton, Oregon



Scale 1" = 300'



Scale 1" = 100'



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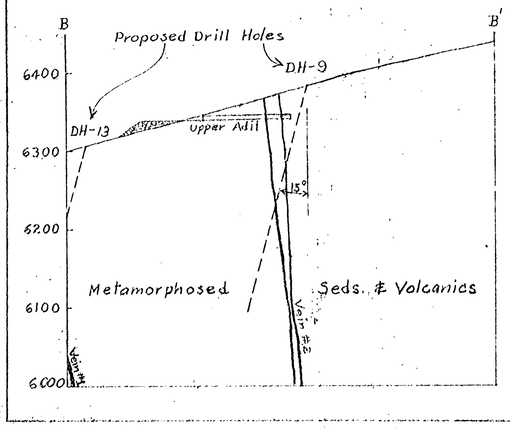
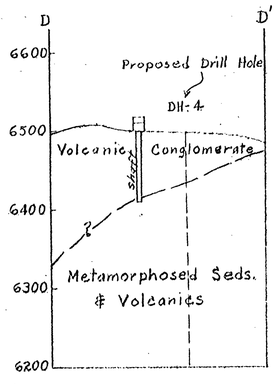
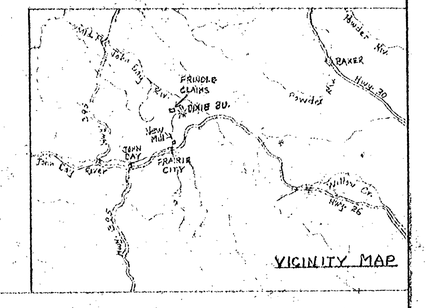






PRINDLE MINING COMPANY
DIXIE BUTTE PROPERTY,
GRANT COUNTY, OREGON.

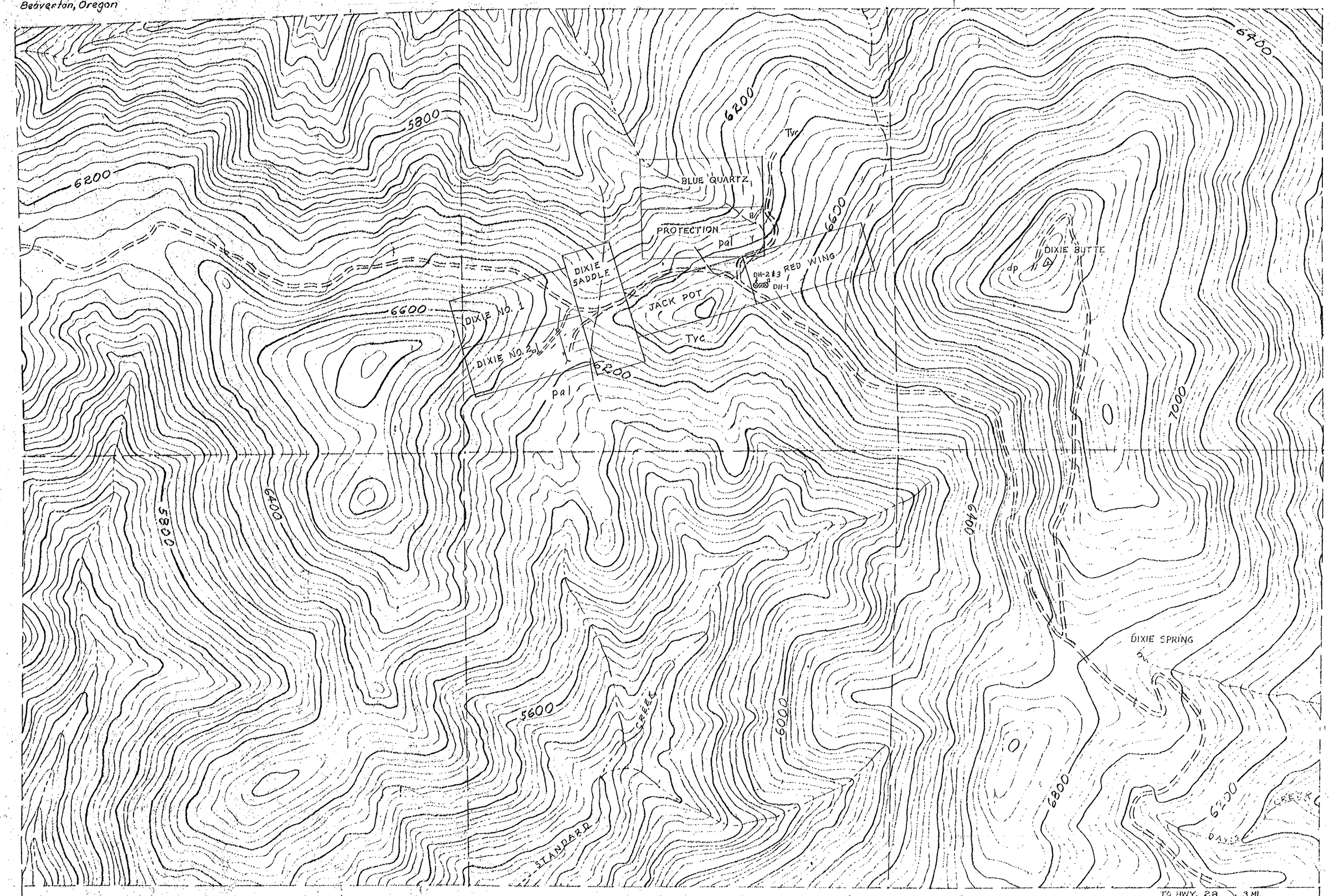
COMPLETED AND PROPOSED EXPLORATION
PLAN AND SECTIONS

Paul W. Howell — GEOLOGIST
24 Mar. 1958 — DATE

Exhibit No. 18

Exhibit No. 18

Prindle Mining Company
P.O. Box 315
Beaverton, Oregon



LEGEND

Eocene	Tvc	Massively bedded coarse andesitic volcanic conglomerates and breccias containing chert and quartz pebbles and blocks of diorite. Some intercalated andesite flows.
Cretaceous (?)	dp	Porphyritic diorite and related rocks intruded as small stocks and dikes.
Permian	pal	Metamorphosed volcanic and sedimentary rocks. Principally metavolcanics, silicified graywackes and greenstones. Faulted and mineralized.

Geologic contacts

Faults

Adits

Shafts and test pits.

Drill holes.

PRINDLE MINING COMPANY

DIXIE BUTTE PROPERTY,
GRANT COUNTY, OREGON.

PLAN AND AREAL GEOLOGY

Scale
60 30 0 60 120 FEET

Paul W. Howell
GEOLOGIST

CONTOUR INTERVAL 40 FEET

24 Mar. 1952
DATE

Exhibit No. 19

Exhibit No. 19