287

The Granby Mining Company Limited

Geophysical and Geochemical Investigation

of

Joyann 1, Joyann 2 and Joyann 3 Mineral Claims

Located on Kennedy Mountain

About 10 Miles South-Westerly From

Princeton, B.C.

In Similkameen M. D.

49° - 120° NW

Keith C. Fahrni, P.Eng.

June to August, 1959.

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1. Introduction

In January of 1959 the three Joyann claims were staked over an expired location on Kennedy Mountain by Robert Mullin for M.O. Heap, the present registered owner of the ground.

In March the three claims were taken under option by Granby Mining Company Limited and plans for a summer work program to cover Granby claims on Kennedy Mountain were extended to include the Joyann claims. This contract has not been registered.

During the summer grid lines were laid down and magnetometer and geochemical surveys were made. This report covers the work done on the Joyann claims and present evidence to accompany "Form D" under the Mineral Act, Affidavit on Application for Certificate of Work.

2. Schedule of Claims covered by this report

The three claims cover a total area of about 142 acres as determined by transit survey of the location lines. The details of the claims are as follows:

Claim	Tag No.	Staking Date	Recording Date	Record No.	Staker
Joyann 1	330666	Jan. 29/59.	Jan. 29/59.	7866	R. Mullin
Joyann 2	330668	"	"	7867	"
Joyann 3	330667	"	"	7868	"

3. Cost Statement

The following costs for work done on the property are based upon the rate of pay for men involved with limitations on pay of technical and professional men as required by the Mining Act. No allowance is made for overtime, holiday pay or other benefits earned during this job under the B.C. Labour Act requirements.

3. Cost Statement - continued

No indirect charges such as proportions of office expense, equipment depreciation, or insurance are included in these costs.

Schedule of Labour on Joyann Claims:

Name	Job	Days	Actual or allowed rate	Total
Bradley, W.	Helper	6 1/2	13.54	88.01
Dearing, M.	Helper	2 1/2	13.54	33.85
Fahrni, C.	Boy Helper	5	10.42	52.10
Grueninger, H.	Helper	4	13.54	54.16
Knowles, R.	Boy Helper	5 1/2	10.42	57.31
Sarich, G.	Operator	8	14.58	116.64
	Sub Totals:	31 1/2		402.07
Laird, A.	Engineer	2	18.75	37.50
Fahrni, K.	Chief Geologist	1	35.00	35.00
	Total:	34 1/2		$474.57

Labour Distribution to Different Jobs:

Grid Survey and Line Cutting:				
Survey crew	6	shifts at 13.54 =	81.24	81.24
Magnetometer Survey:				
Operator	1 1/2	shifts at 14.58 =	21.87	
Helpers	7	shifts at 13.54 =	94.78	
Boy Helpers	5	shifts at 10.42 =	52.10	168.75
Geochemical Survey:				
Operator	6 1/2	shifts at 14.58 =	94.77	
Boy Helper	5 1/2	shifts at 10.42 =	57.31	152.08
Calculations, Draughting and Supervision:				
Engineer	2	shifts at 18.75 =	37.50	
Chief Geologist	1	shift at 35.00 =	35.00	72.50
		Total:		$474.57

I hereby certify that the above is a true and correct statement of labour costs assigned to the Joyann Geophysical Survey during the past summer which is described in the attached report.

J.D. Balden,
Office Manager.

4. Geophysical and Geochemical Survey

a. General Details:

The area covered by the claims lies centrally on the flat top of the spur between Whipsaw Creek and Similkameen River known as Kennedy Mountain. The elevation is about 3900 feet above sea level with a local relief of from 50 to 100 feet.

The region is timbered with fir and jackpine with occasional yellow pine and patches of spruce. Selective logging has removed most of the better trees. Occasional meadows and grassy slopes are devoid of timber.

Rock exposure is scarce but not entirely lacking. The rock showing belongs to a westerly sloping series of volcanic flows, limestones and tuffs which are part of the Nicola formation of Triassic age. In adjoining area this formation is known to be cut by various younger intrusives and faults and it forms the host rock of copper deposits in the district.

b. Station Control

A transit survey following the location line of the claims formed the base line for the geophysical and geochemical stations. Grid lines at 200 foot spacing were marked out on the base line and pickets were set from it at co-ordinate intersections on the cross lines every 200 feet, these lines were run in by tape and compass. Errors in bearing of these lines are adjusted on the completed map sheets.

The transit line is well blazed and cut out, but the cross lines are not cleared, being marked by the pickets inscribed with the co-ordinates and with red plastic flagging tape.

The co-ordinate system is tied into previous work to the north on the Dee Group of claims held by Granby which were covered by a geophysical survey in the summer of 1958, when an assumed origin was taken for the system of co-ordinates for which an approximation of an astronomic bearing was assumed.

4. Geophysical and Geochemical Survey - continued

c. Magnetometer Survey

The survey was run using a "Radar" magnetometer manufactured by Eastern Geophysics Limited, 69 Kipling Avenue South, Toronto. The serial number of the instrument used was No. 94. It is rated at 25.5 gammas per scale division by the manufacturers. Previous experience has shown that results sufficiently accurate for mineral prospecting can be obtained by careful and controlled use of this instrument.

The primary reference point for the magnetometer survey was a certain base point near Allenby to which Granby magnetic surveys are tied. This point has an assumed value of 5000 gammas.

A secondary reference point was established on Kennedy Mountain by repeated readings with a Sharpe A-2 balance type magnetometer. From this point the base line was traversed and cross lines were tied to the base line.

Because of the variation of the instrument, which appears to be due to the daily temperature gradient, all magnetic traverses were made as closed loops of less than two hours duration. The closing error was distributed back over the stations of the loop before conversion to relative gamma values which are posted on the attached map.

Contours at 500 gamma intervals show the vertical force variation of the magnetic field over the survey area.

4. Geophysical and Geochemical Survey - continued

d. Geochemical Survey

The geochemical survey followed the magnetic survey and at each of the stations a sample of soil was taken for analysis. This sample was taken by using an auger drill, of the type used by coal miners. The auger penetrated through the root layer into the soil layer which is considered to be most representative of underlying rock. The samples were placed in ticketed plastic bags and were analysed at the base camp at Allenby.

The analysis procedure used is commonly known as the Rubeanic Acid method. By this method a small measured portion of the sample is leached with an acetic acid solvent which dissolves a proportion of the contained copper. The mixture is filtered onto a strip of rubeanic acid test paper touching the tip of the filter cone. Any copper contained is shown as a blue spot on the test paper, its intensity being some measure of the amount of copper present.

This is the procedure established by Dr. H.V. Warren for Kennecott Exploration and described in "Mining Engineering" November, 1958 issue. Field kits prepared by Eldrico Geophysical Sales in Vancouver, were used and reagents and supplies were furnished by them.

For our surveys, a scale was established for comparison of test strips, to give a quantitative value for plotting. This system is as follows:

0 - No indication.
1 - Barely recognizable color.
2 - Faint blue color.
3 - Definite blue spot.
4 - Strong blue spot.
5 - Intense blue - black colored spot.

In rocks of the Nicola series, over which testing has been carried out elsewhere in the district, it was found that the first three

4. Geophysical and Geochemical Survey - continued

d. Geochemical Survey (continued)

categories are those normally occurring over unmineralized rock. With them a statistical proportion of category "3" values can be expected.

e. Analysis and Interpretation of Magnetometer Results

No magnetometer values were obtained which were high enough to be interpreted as effects of magnetite replacement bodies.

There is a marked increase in strength of the field toward the south-east corner of the map area. Since the Copper Mountain gabbro stock is exposed in outcrop, about 700 feet from the corner of the claims, and a marked magnetite concentration normally exists on this contact, the rise in magnetic value is almost certainly due to approach to this body marked "D" on the map.

The magnetic values over the remainder of the ground show three definite trend lines marked on the magnetic map as A, B, and C. These lines are parallel and have a bearing of N10°E. They almost certainly represent effects of primary structure and rock variation in the underlying Nicola Series. It can be assumed that lines "A" and "B" are tuffaceous horizons or flow tops which tend to be lower in magnetite content than basal parts. Limestone beds might also be represented. Line "C" is a zone a few hundred gammas higher in value than the general background and it is probably a basic andesite or basaltic flow which is known to occur on this trend a little over a thousand feet to the north of the map area.

f. Analysis and Interpretation of Geochemical Results

In general, results from the geochemical survey show a rather low copper content to be present in the soil covering the claims.

The 13 values of category "3" which were obtained are about

4. Geophysical and Geochemical Survey - continued

f. Analysis and Interpretation of Geochemical Results (continued)

average for rocks of the Nicola series, and are a lower proportion of the total readings than is obtained in the adjoining area to the south-west.

An examination of the distribution of the "3" values shows that there appears to be a relation between them and the structural lines of the magnetometer map. A series of three in the south-west corner follow a line parallel to and about 400 feet west of line "A". Three others lie close to line "B" .

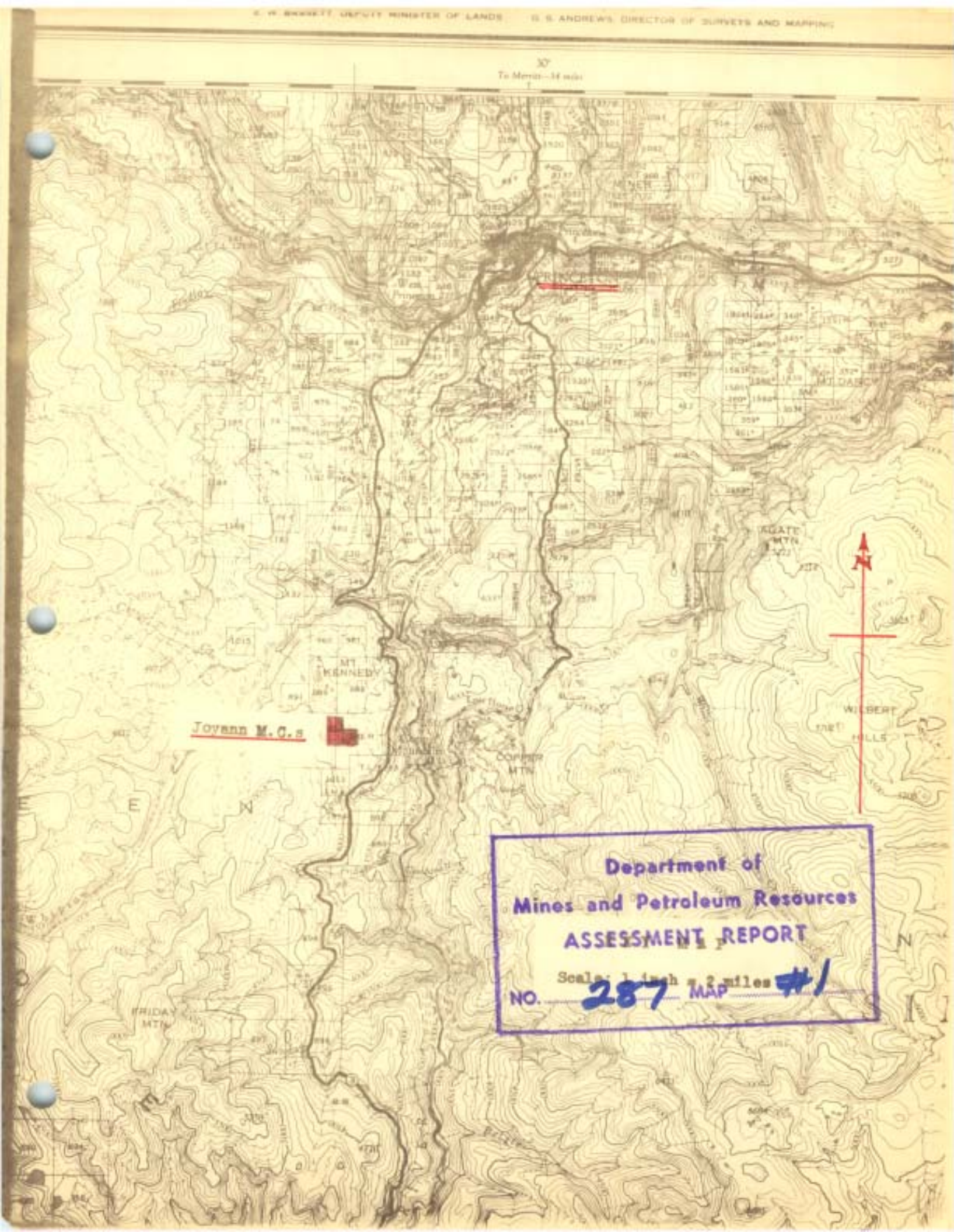
Two values which lie in the north-east quadrant, may have a relation to a north-westerly trending structure which follows the meadow in that part. This is a regional fault direction and extensions beyond the map area shows a continuous series of depressions several miles in length.

5. Conclusions and Recommendations

No marked anomalies occurred under either the magnetic or the geochemical surveys which would indicate the presence of large faults or other structures known to be related to ore bodies in the district except in the south-east corner.

The nearby occurrence of the gabbro contact shown by the magnetic survey, gives the ground some promise. However, it has been found on Copper Mountain, about two miles east on the opposite side of the gabbro stock, that the contact by itself is not enough to guarantee ore bodies. Faults and shear zones to provide chemical ways for ore solutions are essential. The negative results of the geochemical survey in that area should be accepted with reservations, considering the limits of this method, particularly in clay overburdens.

E. W. BASSETT, DEPUTY MINISTER OF LANDS G. S. ANDREWS, DIRECTOR OF SURVEYS AND MAPPING



5. Conclusions and Recommendations - continued

It is recommended that detailed prospecting of the eastern part of the claims be carried out. Special note should be made of any schistosity found in outcrop examined.

This property has an interesting position, but due to its small size it will probably have to wait until ore has become discovered in adjoining ground before it will be developed.

6. Maps

Four maps accompany this report and are bound in the back of the folder. They are as follows:

#1	1. Key Map:	Photostat of part of Princeton sheet Scale 1" = 2 miles
#2	2. Surface Features:	Scale 1" = 400 feet
#3	3. Magnetometer Values:	Scale 1" = 400 feet
#4	4. Geochemical Values:	Scale 1" = 400 feet

Report respectfully submitted:

Keith C. Fahrni

Keith C. Fahrni, P.Eng.

Allenby, B.C.,
November 30, 1959.

Dupes for Blue

JOHANN MINERAL CLAIMS

KENNEDY MOUNTAIN

SIMILKAMEEN M.D.

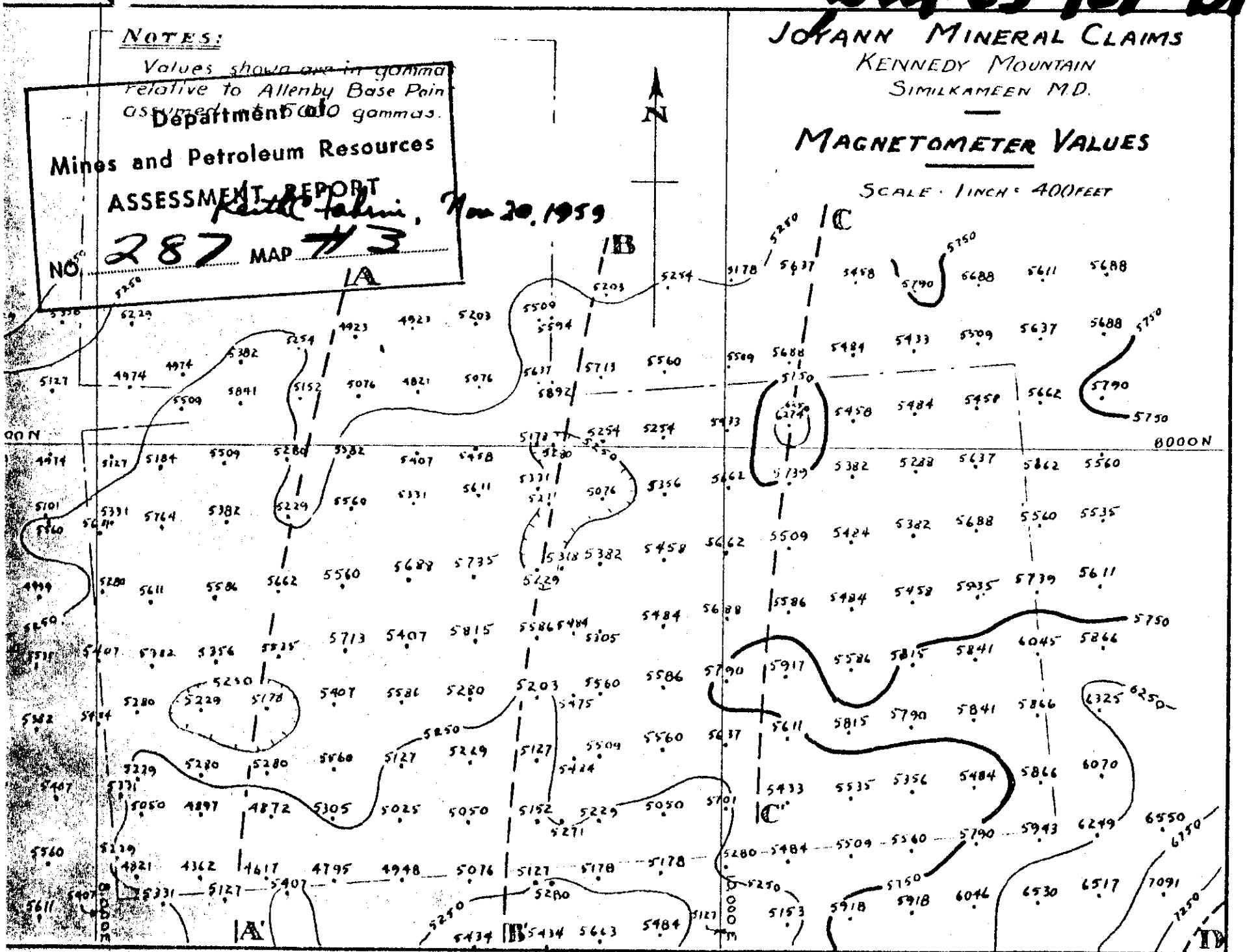
MAGNETOMETER VALUES

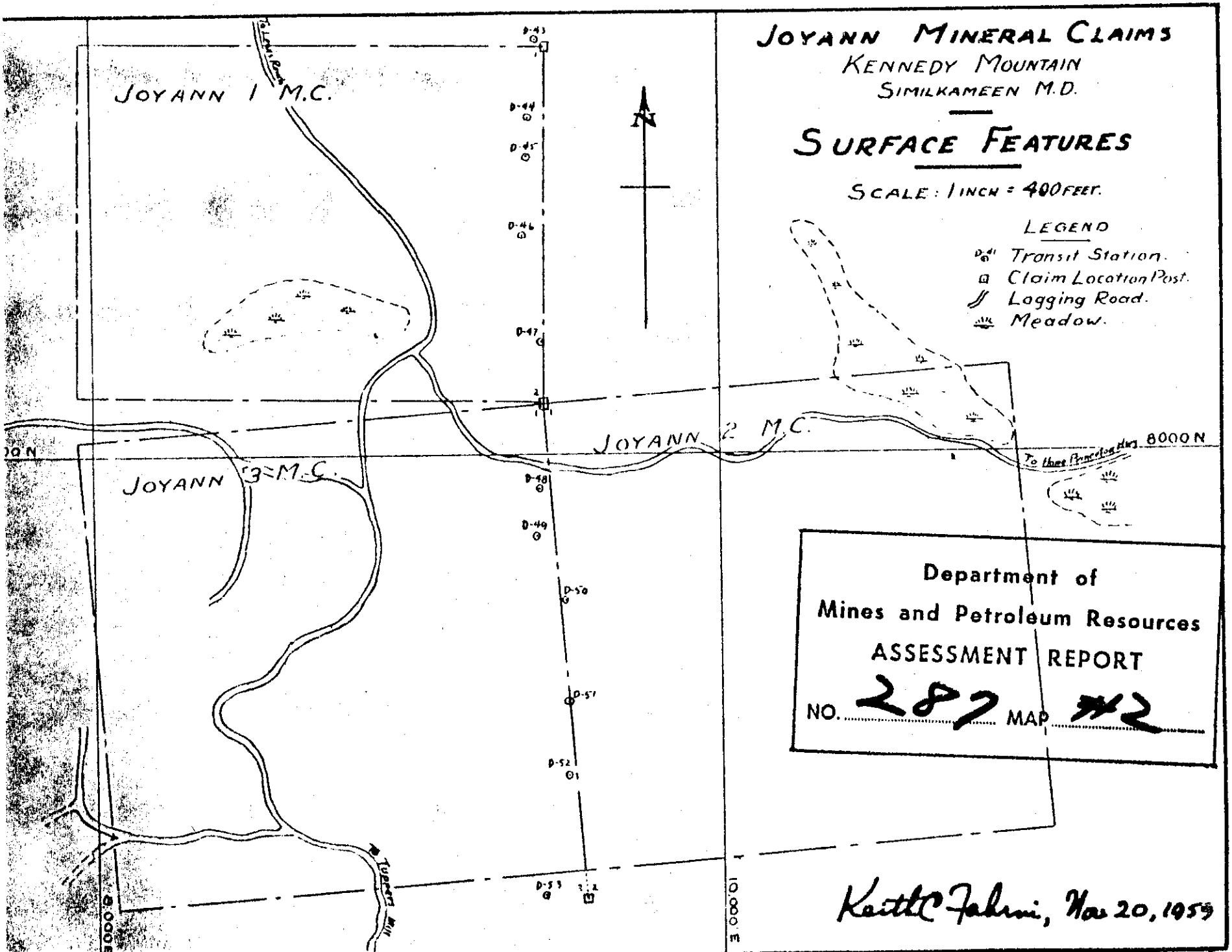
SCALE · 1 INCH = 400 FEET

NOTES:

Values shown are in gamma relative to Allenby Base Pain assumed at 5000 gammas.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
Received Feb. Nov 20, 1959
NO. 287 MAP #3





JOYANN MINERAL CLAIMS

KENNEDY MOUNTAIN

SIMILKAMEEN M.D.

SURFACE FEATURES

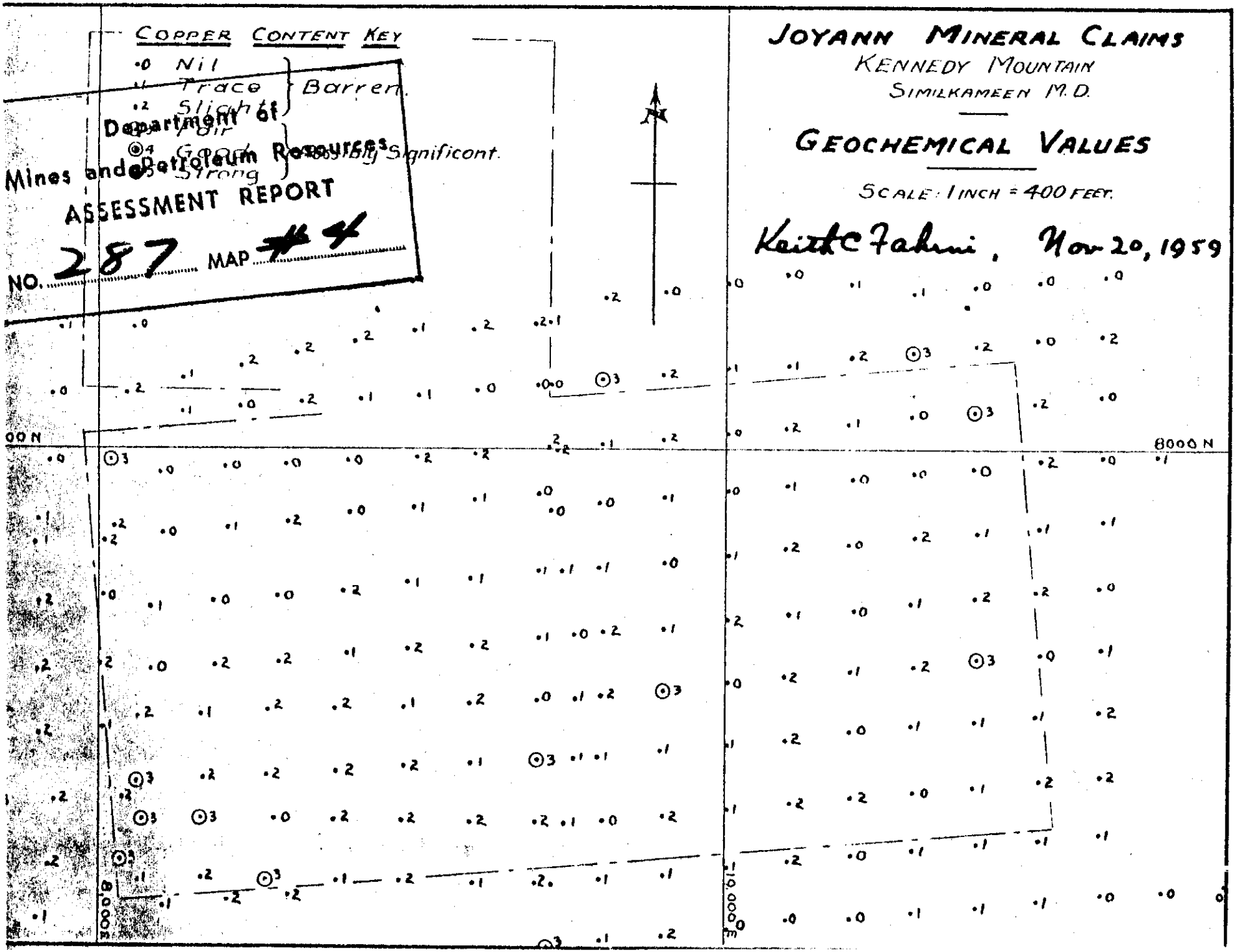
SCALE: 1 INCH = 400 FEET.

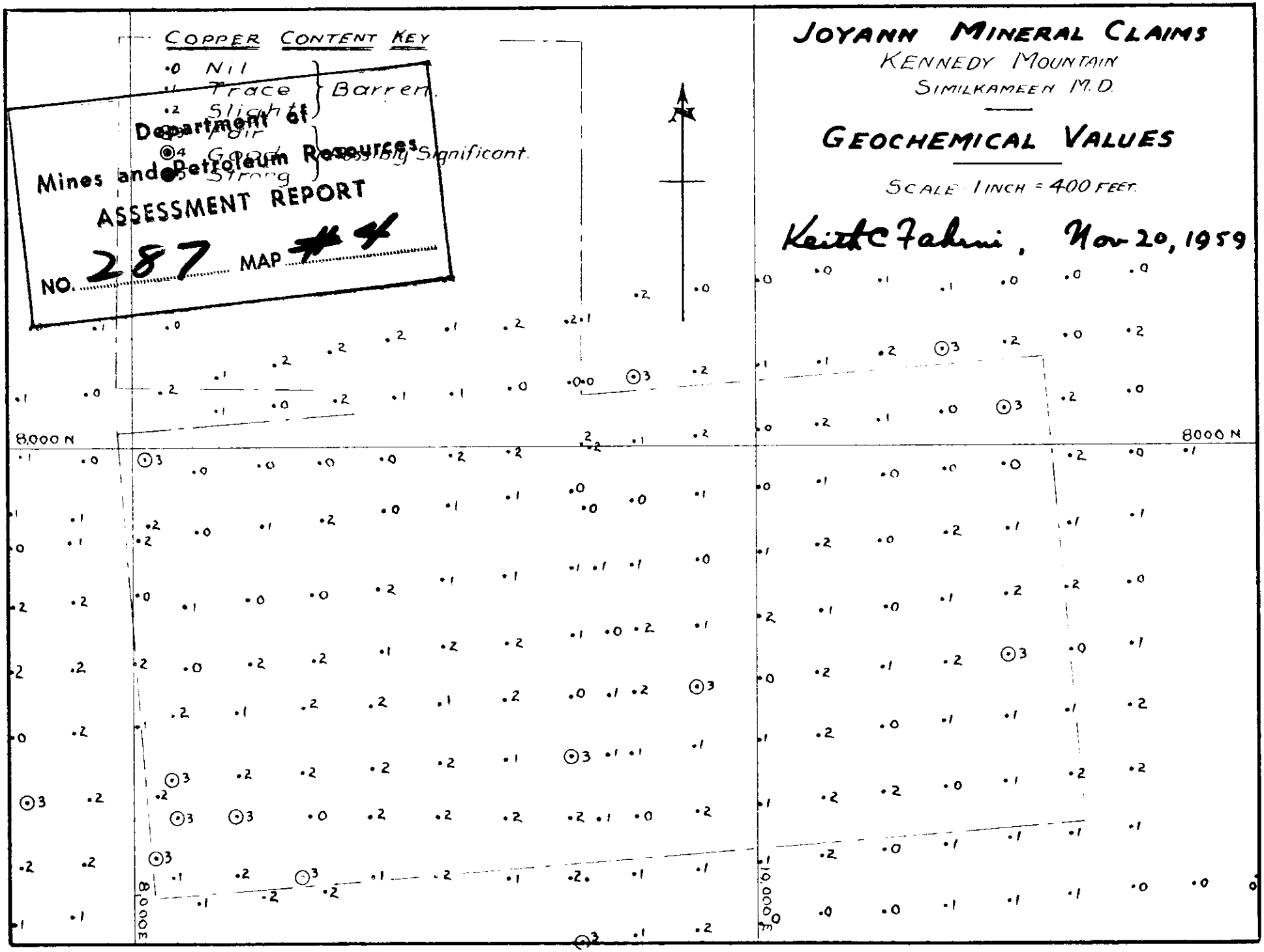
LEGEND

- D-41 Transit Station.
- @ Claim Location Post.
- // Logging Road.
- Meadow.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 283 MAP 2

Keith C. Fahrni, Nov 20, 1959


COPPER CONTENT KEY
·0 Nil
·1 Trace } Barren.
·2 Slight
·3 Fair
⊙4 Good } Probably Significant.
⊙5 Strong
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 287 MAP #4
JOYANN MINERAL CLAIMS
KENNEDY MOUNTAIN
SIMILKAMEEN M.D.
GEOCHEMICAL VALUES
SCALE: 1 INCH = 400 FEET.
Keith C Fahmi, Nov 20, 1959
N
8000 N
8000 E
10000 E


COPPER CONTENT KEY
•0 Nil
•1 Trace
•2 Slight
◉3 Fair
◉4 Good
◉5 Strong
Barren
Possibly Significant
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 287 MAP #4
JOYANN MINERAL CLAIMS
KENNEDY MOUNTAIN
SIMILKAMEEN M.D.
GEOCHEMICAL VALUES
SCALE 1 INCH = 400 FEET.
Keith C Fahmi, Nov 20, 1959
8,000 N
8000 N
8000 E
10000 E

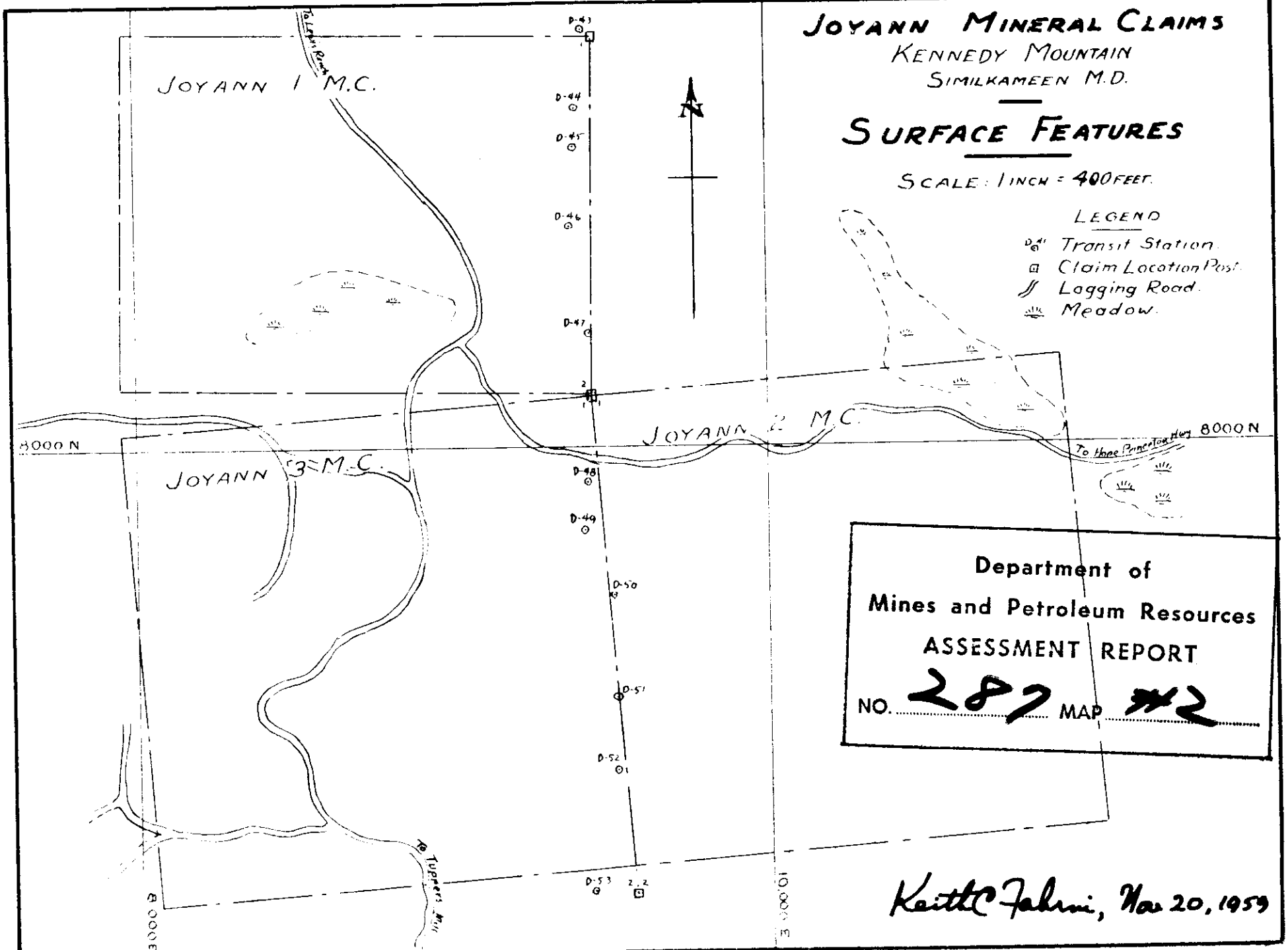
JOYANN MINERAL CLAIMS

KENNEDY MOUNTAIN

SIMILKAMEEN M.D.

SURFACE FEATURES

SCALE: 1 INCH = 400 FEET.

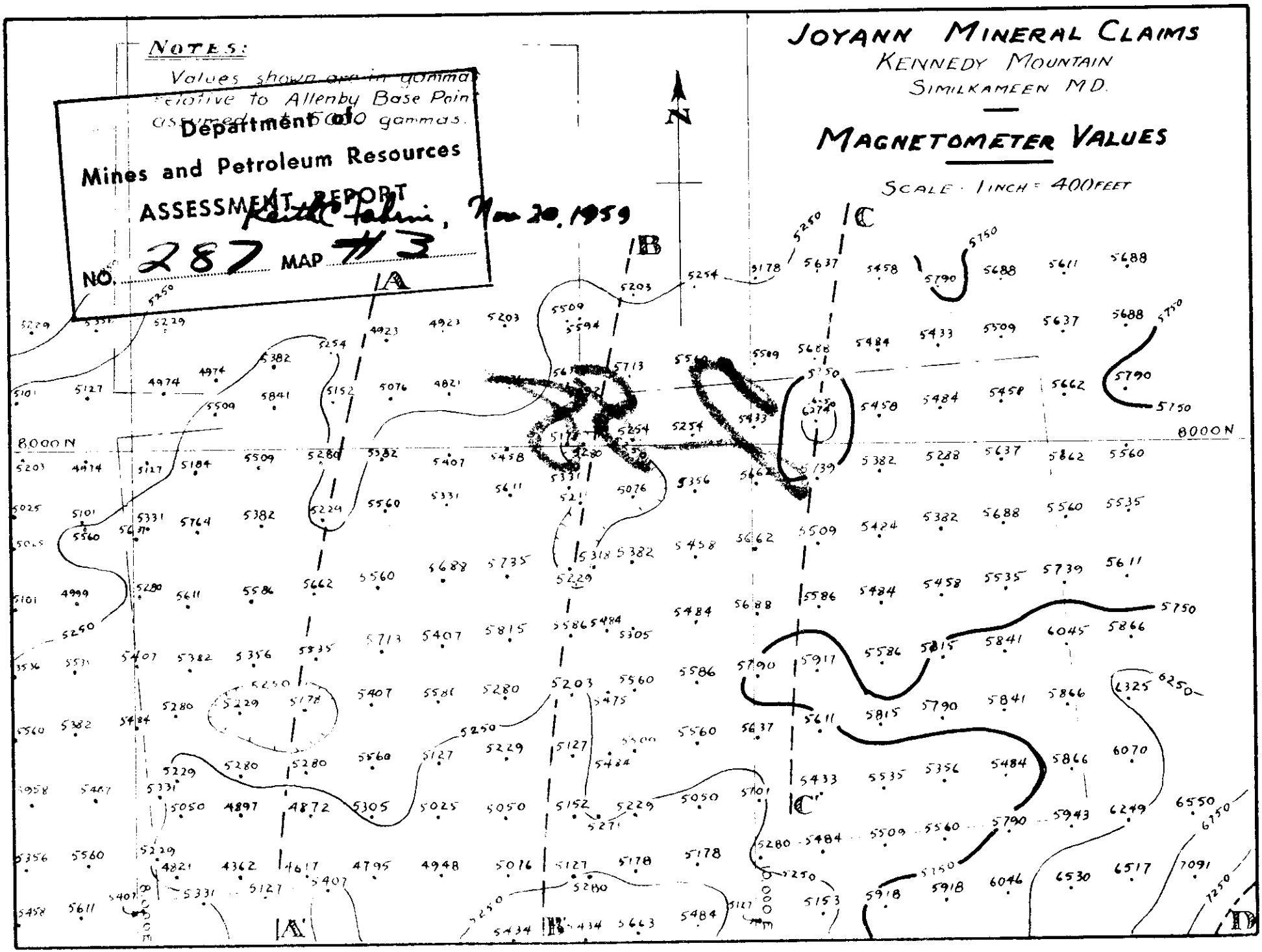


LEGEND

- Transit Station
- Claim Location Post
- Logging Road
- Meadow

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 283 MAP #2

Keith C. Fahrni, Nov 20, 1959


NOTES:
Values shown are in gammas
relative to Allenby Base Pain
assumed at 5000 gammas.
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 287 MAP #3
Keith Fahmi, Nov 20, 1959
JOYANN MINERAL CLAIMS
KENNEDY MOUNTAIN
SIMILKAMEEN M.D.
MAGNETOMETER VALUES
SCALE - 1 INCH = 400 FEET
N
A
B
C
A'
B'
C'
D
8000N
8000N