No. 157 Howard Street
Spokane, Washington 99204
February 18, 1965

Memorandum

To: Chief, Division of Exploration Operations

From: Acting Field Officer, Region I

Subject: Transmittal of OME Application
Silver Reef Mines, Inc. (Silver)
Silver Reef Mine
Powell County, Montana

The enclosed incomplete application was brought to the Spokane office February 15, 1965, by Charles H. Krell and William M. Hualon. They were informed that copies of letters to the two banks were required as well as the banks' replies; that the Modification of Lease lacked one signature; that Lien and Subordination Agreements were missing; and that, since the proposed drilling was to be done by the company, they should submit a breakdown of their estimate of costs. February 16, 1965, the application, supposedly with the missing and/or corrected documents, was left at the office.

The Modification of Lease still lacks a signature and is being returned to the applicants, along with a request for copies of letters to the banks and the replies, which are now missing, and estimate of costs for drilling by the company.

Your attention is directed to the Lease of February 14, 1964, page 3, item (4), which seems to me to render the value of the lease open to question.

A weighted average of the settlement sheets shows that 1,520.94 tons of ore sold had a grade of 4.7 ounces silver per ton. The application lists 9 samples, 7 of which it implies were channel or chip samples taken over widths ranging from 15 to 40 feet and refers to as "all hand samples were large cross section samples." However, samples numbered 2 through 7 are the same, respectively, as samples 7, 6, 4, 5, 2, and 3 that Nicely on page 6 of his report identifies as "grab samples taken as trucks were loaded." I get the impression that all mined ore was taken from the tunnel, not from the various locations within the claims. In any case, the weighted average grade of the applicants' samples 1 through 8 is 16.12 ounces silver per ton over an average width of 27.5 feet, somewhat higher than the settlement sheets indicate.

D. R. MacLaren

Enclosures

Director's Reading File
Resources Research Branch Chief

an:mls

Silver Reef Mines, Inc.
Deer Lodge, Montana.
Box 211.

No I- Financial Eligibility:

A- Enclosing two letters from banking institutions.

B- None

C- By furnishing, Core drilling equipment, Compressor, Transportation Equipment, and Bull Dozer.

No 2- Applicants rights in land.

A- We have a lease with option to purchase, there are no leins, mortgages, or other encumbrances on the land, an enclosing copy of lease with option.

B- There are six mining claims in this group, Enclosing sketch.
The Silver reef patented lode claim, survey no 8880, patent no, 90631.
The silver reef extension, No I-recorded in book-9, page417.
No 2- " " " " -9, page419.
No 3- " " " " -9, page421.
No 4- " " " " -9, page445.
No 5- " " " " -9, page447.
The group consists of one patented claim and five unpatented claims located in Powell county Montana and are in Sections26, T. 11n. , R. 10W., M.P.M. Enclosing Form 52

No 3- Physical Description.

A- The property is a new prospect, the ely workings are the one described in Mr Nicelys report, This tunnel is approximately 125' below the highest elevation point on the property, the area above the tunnel is consulat vertical exposure of the mineralized material and can be seen for approximately 1.000' in a northerly direction and about 400' in a westerly direction, all the exposed out crops assay, Varying from ~~[illegible]~~ oz, oz- Ag, to 36, ounces-Ag. and small amounts of gold, All hand samples were large samples and cross section, varying in width from 5' to Forty', Reference to sketch of of out crops which were sampled, Assay sheet dated July 13, 1964. Assay No I and 2, were from a 12' cross section of out crop #3, Assay no 3 and 4 are from out crop #9, later I mined a section about twenty feet wide from each one of the outcrops and shipped approximately 54 tons from each place, as this was surface ore and was diluted with some overburden the silica content and the silver were perhaps also lower due to the dilution, reference to smelter settlement sheet, Lot 1-750.
The large tunnel described in Mr Nicelys report, is located right on the sedimentary contact, this contact material projected in to our tunnel at some points as far as ten feet, the assays on this contact material is almost nil, we did not sort any of this out of the ore shipped from the tunnel,

B- Produced this myself.

C- An sending smelter settlement sheets of the production.

D- There are approximately 500.000 tons of mineralized siliceous material exposed above the tunnel from which production abtained, and above

To [illegible]

Anaconda, Montana

December 11,1964

Mr. E.P. Cadwell

Occidental Petroleum Corp.

Bakersfield, California

Dear Sir:

On December 2, 1964 in the company of Mr. Charles Kroll of the "Silver Reef" mining Company I made a preliminary examination of a mining property in Powell County Momtana, The property is more particularly located in Section 26, T. 11 N. ; R. 10 W. M.P.M.

The deposit is located approximately 13.5 miles North of Garrison Montana which is 35 miles Nobth of Anaconda. Garrison is located on U.S. Hiway 10 and is a stop on the Northern Pacific Railway.

The deposit is reached by a good mountain road that has been constructed partly over U.S.F.S. land. The elevation of the mine is about 6200 feet above sea level - not really high for Western Montana. A four wheeled vehicle was used to make the trip as there was better than a foot of snow covering the mountains which made detailed examination of surface geology difficult at this time. This road would be easy to plow out and maintain in the winter if hauling were to be done- either machinery in or ore out.

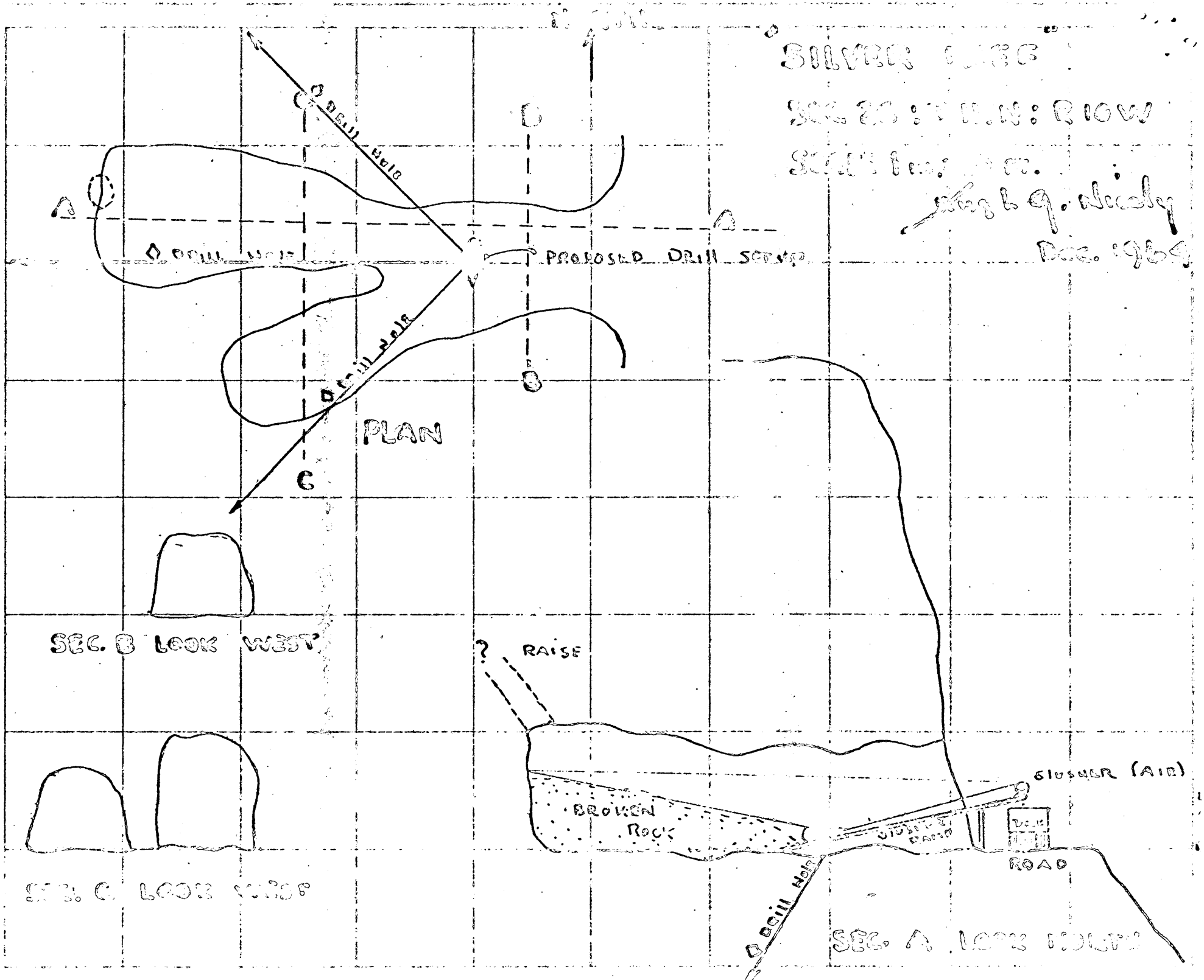
The primary area of mineralization examined is claimed by a patented mineral location - it is the "Silver Reef" and has been numbered 8886. Mr. Kroll informed me that 5 unpatented mineral claims have been filed on and properly located. I did not check into the validity of these five claims. A search of the records in the County courthouse would have to be made to follow up on this, also a check would have to be made to be sure the claims were actually staked out properly. All this could be done at a later date, I am sure the loactions are valid.

The deposit that has been worked is at the contact zone between Tertiary volcanics and Mississipian sedimentary rocks. The sedimentary rocks are sandstones, shales, limestones with some dolomitic members. The volcanics have been described as volcanic flows and assorted pyroclastics including latites, andesite some rhyolite and basalt. I have taken specimens of these structures and will forward them to you with the sample of the silicious ore. In my opinion this is an epithermal deposit in which the limestones have been altered and silicified at the contact with the intrusive. There are several streams in the area of hot water that are open the year around. I would believe that this is evidence of epithermal activity in the formation of silicious material in the zone of contact between the intrusive and the sedimentary series.

A more complete examination of this contact zone could be made when the ground was bare, however the contact zone that I saw was easy to follow due to the high relief of the sedimentary beds, in the area of the present tunnel the difference in elevation between the volcanics and the sedimentary beds is quite evident.

One of the enclosed sketches shows the extent of the work that has been done to date. This material was shipped to the smelter at Anaconda and was purchased by the Anaconda Company. I am enclosing the results of several shipments made to Anaconda. The present opening is nothing more than an enlarged tunnel with a slusher ramp built to load the broken ore into trucks. As I understand it the ore was not sorted but shipped as it was loaded from the mine. A detailed examination of the back of this tunnel could be made with a long ladder, however I don't believe this would be necessary at this time. The raise indicated on the sketch was inaccessible but the broken rock looked like it was quite high in lime. This condition of lenses of lime is common in this type of deposit. The dilution of the ore with lime is apparant from the settlement sheets from the smelter, the CaO varied from 3.4% to nearly eight percent. The variation of the silver and silica in the above samples bears out the presence of excessive lime. Some selective mining would be the answer to this problem.

I. S. & R. FORM 16-G


SILVER
Dec. 1964
A
B
C
D
Drill Hole
Drill Hole
Drill Hole
PROPOSED DRILL SETUP
PLAN
SEC. B LOOK WEST
SEC. C LOOK NORTH
RAISE
BROKEN ROCK
FLUSHER (AIR)
ROAD
SEC. A LOOK NORTH

Silver Reef Mines, inc.
Deer Lodge, Montana.
Box 2II.

Red shaded area indicates igneous material.

Dark shaded area indicates sedimentary material.

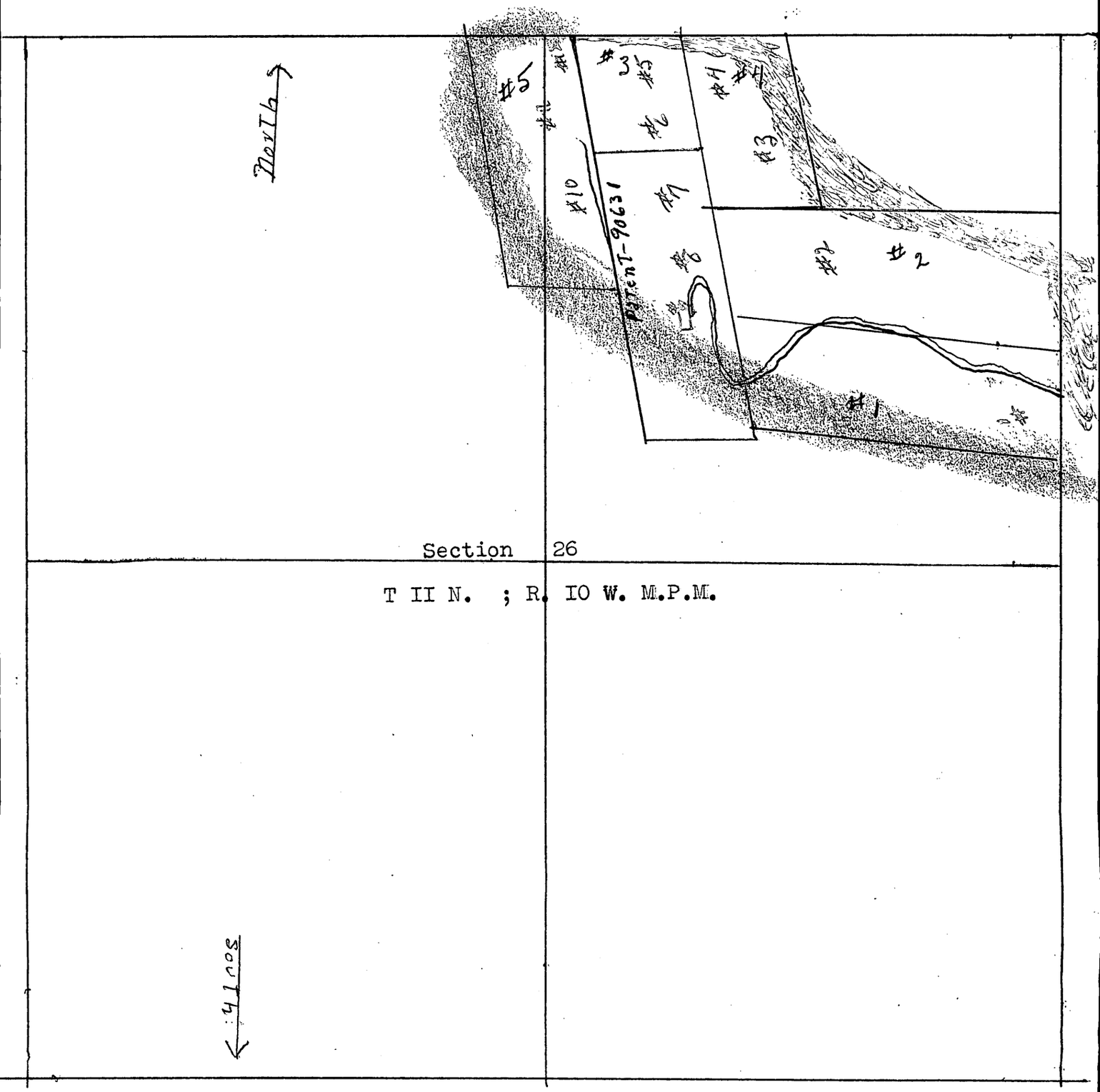
Double blue lines indicates access road.

Numbers in blue ink are the mining claim numbers.

Numbers in red ink are locations of mineralized quartz in place.

Assay of quartz out crops,	Width	AU.	AG.	
# I	20'	0.02	36.I4	7.22,80
2	30'	0.08	I6.00	480.
3	40'	0.00	I9.60	784.
4	30'	0.00	7.00	210.
5	20'	0.0I	5.00	100.
6	25'	0.02	II.20	280.
7	I5'	0.0I	4.20	630.
8	40'	0.02	8.50-ref to smelter lot-B750	
9	40' - enclosed smelter settlement sheets.			

16.12
220) 3546.80



Section 26

T II N. ; R. IO W. M.P.M.

Silver Reef [illegible], Inc.
Deer Lodge, [illegible]
Box 2II.

The silver reef group of claims consis[illegible], one patented claim, [illegible] nted claims, the unpatented claims [illegible] located and put on record [illegible] 4, there are also two claims on which the work has not been compl[illegible] and no7, all the claims are in, section [illegible] T II N. ; R. 10 W. [illegible] described as follows,

The Silver Reef Lode, survey no, [illegible]86, patent no [illegible]063I.
The silver reef extensions, no I, book-[illegible], page 417.
no 2, [illegible], 419.
no 3, [illegible], 421.
no 4, [illegible], 445.
no 5, [illegible], 447.
The claims are in Powell county, and [illegible] at Deer Lodge, Montana.

The patented claim was paterted in the [illegible] r 1908, apparently just [illegible] none for patent, since that time there has no work been done out [illegible] face sampling, we have done considerable trenching to expose the wh[illegible] mineralized ~~mineralised~~ structure, the exposed width of mineralized [illegible] from 800' to I.100' wide, by approximately [illegible].000' in length.

The claims are fourteen miles due north of Garrison Mont, on the [illegible] warm spring creek, Garrison Mont is [illegible] Milwaukee and Northern [illegible] lines, and on hiway no 10, west, [illegible] constructed a good (water [illegible] mining road from the hiway to the claims.

Reference to sketch of the claims, the red line indicates the igne[illegible] contact, and the dark shade line is the sedimentary contact, the [illegible] blue ink are the numbers of the claims, and the double blue line ind[illegible] roadway on the claims, the numbers marked in red are exposed out cr[illegible] have been sample assayed, as follows.

Out crop No I,	20' across,	Au. 0.[illegible] ,	[illegible] 36.14.
2,	30'	0.08,	[illegible]
3,	40'	0.[illegible],	[illegible]
4,	[illegible]	[illegible]	[illegible]
5,	10'	[illegible]	[illegible]
6,	15'	[illegible]	[illegible]
7,	15'	[illegible]	[illegible]
8,	40'	[illegible]	[illegible] 3 tons shipped [illegible]
9,	tunnel described in [illegible]	[illegible]	[illegible] tons shipped from [illegible] results of which [illegible] in engineers report.

The I.400 tons of ore shipped from the large tunnel was run along the [illegible] entary contact, due the intrusion of the sedimentary material at sever[illegible] in the tunnel which assayed very low in values apparently deleted [illegible] did not sort anything out of the material shipped to the smelter, [illegible] samples were large cross section samples, [illegible], shown above was [illegible] emert on 108 tons.
Out crops no 5,6,7, and 8, are at the base of a cliff which is expos[illegible] varying from 100' down to 20', there are approximately 200.000 tons [illegible] sight in this exposure, from the sampling done on this, shows profit[illegible]

The mining methods planned are, open pit mining in the summer time, [illegible] tunnel openings for bad weather conditions, as no timbering is [illegible] the large tunnels, mining costs should be very low.