Dome mtn 93 N.W. 93 N.W

882373

FEDERAL GROUP, Dome Mountain Area,
Omineca District, B. C.

November 9, 1949

MEMORANDUM TO: Mr. W. J. McDonough

1. INTRODUCTION

The Federal Group is a gold prospect comprising thirty-four Crown-granted mineral claims (of which eight are fractional claims) situated on Dome Mountain, 17 miles east of Telkwa, B. C., a town on the Northern line of the C. N. R.

Gold-bearing veins on the claims were last explored in 1924, since when the property has been inactive. On July 19, 1949 the Group was purchased for taxes and title was transferred to Ingray Yellowknife Mines Limited.

A study of all available information on the claims, supplemented by a brief field examination during the course of other field work in the area in 1947, suggests that the Federal Group is the most interesting of several gold prospects in the Dome Mountain area, and that the property warrants further development, as outlined under "recommendations" below.

2. PREVIOUS DEVELOPMENT

History of Property

Sources of information for the following notes are:

(a) B.C. Minister of Mines Reports 1918-1924 inclusive
(b) Geological Survey of Canada, Paper 40-18 & Map 671A, 1940
(c) Dome Mountain Gold Mining Company - Assay Plans, 1923 & 1924
(d) Field examination - A.P. Beavan, July 1947

Following sporadic prospecting in the Dome Mountain area over a period of years, culminating in the discovery of the Forks Vein in 1921 under Dome Mountain Gold Mining Company, a subsidiary of Federal Mining & Smelting Company of Wallace, Idaho. Surface and underground exploration was carried on until October 1924, when the property was closed down. From then until 1946 the property was maintained in good standing by Federal Mining & Smelting Company.

Development Results

Forks Vein -- This is the most important area on the property. As a result of twenty-five years' exposure to the freshets of Federal Creek, practically all surface showings and outcrops in and near the creek are covered with boulders, gravel and timber debris. As no plan of the surface work is available, and as the sampling plans of underground workings do not indicate the relations of workings to surface exposures, it is impossible to give any reliable correlation between the following surface and underground develop

results:

At the junction of two veins in the bed of Federal Creek surface work exposed an area of quartz and mineralization 200' x 50' (true width unknown). The quartz contained 5-10% sulphides and over the entire area is said to have averaged 1 oz. Au per ton.

Underground openings include No. 1 vertical shaft to 107' with 360' drifting and 120' cross-cutting at the 100' level, as well as several adits, prospect shafts and winzes, all within a radius of 500'. These workings are now all inaccessible. Sampling results include -

El. 4150'	No. 1 shaft 100' level	110'	2.6'	0.468 Au 1.70 Ag
El. 4165'	Drift adit	50	1.7	1.27 Au
	Winze sunk 10' from adit (including at bottom of winze, 1.58 oz. over 2.5')	10	1.56	1.50 Au
El. 4165'	At portal of adit X-cut		11.5	1.80 Au

Other veins explored on the property are as follows:

Ptarmigan Vein (3 miles northwest of Forks)

Traced by surface cuts for 1,000' (El. 4750-4950')
Drift adit, 430' long at El. 4750'
incl: shoot 25' long, 1.9' wide, 0.32 oz. Au
Composite sample from open cuts: 1.40 oz. Au
2.80 oz. Ag

Cabin Vein (0.2 miles from Forks)

Opened by: Cross-cut adit 370' (El. 4520'), drifts and short raise showing vein - 2.3' wide, 0.02 to 0.61 oz. Au assays.
Also prospect shaft to 23', with samples 0.52 oz. over 4.0' and 0.20 oz. over 7.0'

Jane Vein (1 mile southwest of Forks)

Opened by drift adit 250' long (El.4950')

Results:	50'	2.0' wide	0.134 Au 4.40 Ag
	70'		Low values
	120'	2.9' wide	0.24 Au 0.65 Ag.

Development of the Forks Vein area was apparently stopped because "... Underground results ..."" (failing to duplicate the dimensions of surface ore exposure on the Forks Vein)"... were not considered satisfactory".

As noted previously, the limited data available makes it impossible to say whether the surface ore shoot was reached in underground work, but in any case no effort appears to have been made to discover other vein intersections which presumably might contain wide rich ore comparable to that of the surface showing. There is no record or evidence of diamond drilling anywhere on the property.

3. GEOLOGY

The Federal Group lies in a comparatively subdued mountainous area with timberline at 5,000'. Much of the property is drift-covered and heavily wooded.

Bed rock includes andesite, tuff and sediments of the Hazelton Group. Small quartz feldspar porphyry intrusive bodies outcrop within two miles of the Forks Vein. Very little is known of the structural relations of the rocks or of the veins. The following inferences drawn from the available literature are, therefor, tentative:

(a) The volcanic rocks are involved in relatively open folding with axes trending northwest;

(b) Quartz-filled fissure veins are quite numerous in the area and occupy a pattern of intersecting fractures. Some of the known veins are continuous for some hundreds, or possibly thousands, of feet on strike;

(c) Strongly schistose zones occur in the more massive normal greenstones. On the Federal Group some ore shoots occur where veins intersect such zones or where two veins intersect (Forks Vein).

An exposure of weakly mineralized shearing with quartz stringers, near the bed of Federal Creek and approximately 200' from No. 1 shaft, assayed 0.075 oz. over 5.5' in samples taken in 1947. Rock on the waste dump of the shaft includes similar sheared rock as well as fresh amygdaloidal andesite and tuff. A composite sample of all vein material on the dump assayed 0.96 oz. Au, 4.00 oz. Ag, per ton. The vein matter is white quartz with pyrite, chalcopyrite, sphalerite and galena.

Other workings on the property were not visited in 1947.

4. ECONOMIC CONSIDERATIONS

Access

The Federal Group is twenty-three miles by overland route from Telkwa, of which seven and one-half miles is motor road; the remainder is an abandoned wagon road (used in 1923-24) suitable for packhorses or for tractor haulage in winter. It is estimated that this could be improved for truck haulage at a cost of $45,000.00.

Climate

The winter climate, with snowfall of 3 to 4 feet, is not particularly severe -- it would not hinder year-round mining operations.

Topography

Mountain slopes at the Forks Vein area are wooded, driftcovered and nowhere precipitous. Federal Creek is one of the few permanent streams flowing off Dome Mountain and affords an ample water supply for all mining purposes.

Timber

Spruce and balsam forest on the property would provide local timber for most mine and construction purposes.

Power

No hydro-electric power is developed in the district but soft coal deposits are mined at Telkwa and diesel fuel oil is delivered for 21¢ per gallon f.o.b. Telkwa. Fulton River, twenty-five miles east of the Federal Group, is believed to have one or more potential power sites.

5 CONCLUSIONS AND RECOMMENDATIONS

1. Shoots of highgrade gold ore are known in a number of veins in the Dome Mountain area. On the Federal Group exploration on some of the known veins appears to have been inadequate to determine their ore-making potentialities. Although the veins are narrow, the grade of ore in some known shoots and the indicated structural possibilities for shoots of good width are attractive features.

In addition to gold and silver, the ore shoots may well contain economically important amounts of lead and zinc. (Mineralogically similar ore from a neighboring property contains 1% lead, 5% zinc.)

The general geological conditions are believed favourable for the existence of more veins than heretofore known and for reasonable continuity of veins and fractures along their strike and dip.

2. The accessibility and natural resources of the property and the helpful policy of the B. C. Department of Mines towards mining development are conducive to economy of operation.

For the above reasons the property is considered to warrant further exploration to locate economic quantities of gold-silver ore in the Forks Vein area.

Because of the derelict condition of the Forks Vein surface and workings and the lack of accurate records, already mentioned, initial work should be directed at determining the surface position of the reported veins and ore, correlating this data with the underground workings and generally establishing the pattern of vein fractures and ore shoots. Such information would be essential in determining the advisability of further development. The initial study would require the following sequence of field work:

(a) Detailed surface mapping of Forks area to establish topography and surface geology. Time required -- three weeks.

(b) Shallow diamond drilling - to locate and sample veins and to determine relationship of veins formerly tested on surface to those explored underground at No. 1 shaft. Time required -- probably ten weeks.

The above preliminary work would be completed in the period July 1 to October 15.

The estimated cost of the above preliminary exploration is as follows:

Geologic and topographic study	$2,000.00
Diamond drilling - 4,000' @ $4.50	18,000.00
Supervision, travelling, administration	3,000.00
Total	$ 23,000.00

Respectfully submitted,

"A.P. Beavan"

APB/ES

A. P. Beavan.

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DME MOUNTAIN GOLD PROPERT.
TELKWA, British Columbia.

By: G. R. Hilchey. P. Eng.

INTRODUCTION.

This report is based on field work carried out during July and early August 1963.

LOCATION AND ACCESS.

Dome Mountain lies approximately 20 miles, airline, east of Smithers, B.C., or 17 miles east of Telkwa. Smithers is adequately served by all usual modern transportation and communication facilities.

The property can be reached from Highway 16 by branching off about 3 miles east of Telkwa, thence by 7 miles of fairly good gravel road, followed by 10 miles of fair to poor gravel road, and 5 or 6 miles of fair trail.

Further details are shown on the accompanying location map.

Helicopter landing areas are plentiful above 5000 ft, but scarce below this elevation.

PHYSICAL FEATURES.

The base of Dome Mountain is between 3500 and 4000 ft., and the top at 5751 ft.

Timberline is between 5000 and 5200 ft. The timber is mostly mature balsam and spruce.

The continental glaciation moved approximately N.60°E. across the area. There is little overburden above timberline, but below timberline, particularly on the east side, there is usually 10 to 50 ft. of overburden.

The climate is typical of the central interior of B.C. Snowfall is moderate, winter temperatures are rarely more than -20°F for extended periods and likewise rarely over +85°F. during the summer. Most of the snow disappears from the mountains between the middle and end of June. Patches of snow remain on the north side until late July.

PROPERTY.

The property consists of 34 Crown granted mineral claims and 28 claims (including fractions) held by location. Mr. K. J. Springer is the registered owner of all claims. The claims list is attached.

HISTORY.

The original discoveries on Dome Mountain were made prior to 1915. Trenching and a very small amount of underground work were done on the showings by the prospectors over the succeeding few years.

Most of the known showings were consolidated about 1922 by George Hazelton and Associates, and optioned to Dome Mountain Gold Mining Company, a subsidiary of the Federal Mining Co. of Wallace, Idaho. The Dome Mountain Co. sank a shaft about 100 ft. deep and did several hundred feet of drifting and crosscutting on the Forks showing, and a few hundred feet of adit work on each of three other showings (Ptarmigan, Jane Vein, Cabin Vein).

The Federal Company evidently felt that further work was not justified and terminated operations in October 1924. No work has been done on the property since.

The property of A. ~~Golp~~ cope of Smithers, B. C. referred to on G.S.C. Maps 971-A and 671-A as "Babine Gold" adjoins the Dome Mountain Gold property on the east. This property has been the object of considerable work and the subject of numerous reports.*

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* Report on "Dome Mountain Property" by D. M. Cannon, Aug.5/49 (Company files)

B.C. Dept. Mines, Annual Report, 1938. pp B-15, B-20 contain a map of the property and results of mill tests on the ore.

GEOLOGY.

Lithology:

The bedrock of the property consists entirely of the lower , volcanic formation and the middle, sedimentary formation of the Middle Jurassic-Hazelton Group. No intrusive rocks were observed. Rhyolite dykes are reported to occur, however, on the Babine Gold property.

The volcanic formation consists predominantly of green, purple, and red tuff and breccia. Green, purple and red andesitic flows also occur and lie mostly close to the top of the formation. At least some of the tuff and breccia is waterlain, and at least some of the flows are pillow lavas.

The sedimentary formation consists of argillite (mostly black, near the base, but lighter above), with some sandy and tuffaceous beds. No limestone was observed.

Metamorphism:

The Hazelton Group on Dome Mountain has been subject to regional metamorphism. Most of the rocks have some metamorphic minerals and schistosity is common. In some cases, the results of metamorphism make it difficult to distinguish flows from tuffs.

Structure:

The structure of Dome Mountain is much more complex than previously indicated. Enough attitudes and top determinations were obtained to outline the major structures, but lack of outcrops in the southeastern part of the property leaves much of the detail in doubt.

An anticlinal dome covers most of the northern part of the property with the axis of the anticline striking about N.20°W. Intense drag folding is conspicuous on the Raven claim on the western flank of the structural dome. Drag folding is less intense on the eastern flank.

Most of the southern half of the property lies in an area of East-West trending faults and folds. The faults apparently dip steeply to the south. The folds are tight, in places overturned, and may be isoclinal.

The extreme eastern part of the property lies in an area of folding which trends northwest and plunges to the southeast. Its exact relationship to the other two structural units is obscure. There may be more faulting than can be established by evidence obtained to date.

ORE DEPOSITS

Mineralization:

The mineral showings are quartz veins mineralized with pyrite, chalcopyrite, tetrahedrite, galena, sphalerite and arsenopyrite. Arsenopyrite occurs principally in the showings on the Pioneer and Ptarmigan claims. Galena and sphalerite occur only in very minor quantities on the Higgins (Raven claim), Chisholm Shaft, Jane Vein and Hoopes Vein. No visible gold was observed nor has any been reported on this property. Investigation of the ore from the Babine Gold indicated that most of the gold was in the galena with a lesser amount in the chalcopyrite. Sampling at the Dome Mountain property confirms this. Tellurides have been reported to occur on the Babine Gold property but none were identified in specimens from the Dome Mountain Gold property.

Hydrothermal Alteration:

Hydrothermal alteration is conspicuous in the upper members of the volcanic formation from the centre of M.C. No.6 eastward for a mile to the Forks showing. Practically all the outcrop within several hundred feet of the Forks shows some hydrothermal alteration and most of it is quite intense. Hydrothermal alteration is much less conspicuous in the other showings and may be almost non-existent.

The alteration consists of bleaching, carbonatization, quartz veinlets, development of fuchsite ("mariposite") and pyritization. The more intensely altered rock usually contains a few specks of galena and chalcopyrite and yields low values in gold.

The veins were observed to be both bedding plane veins and fracture fillings. One type has been noted to change to the other along strike or down dip. Usually the veins occur in tuffs and the bedding plane veins often follow exactly the most intricate drag folding. The veins are not affected by movement of the drag fold and must have been formed after the drag fold was fully developed.

Post-vein normal faulting has been observed in one or two places.

SAMPLING

The underground workings were inaccessible and the surface pits and trenches were mostly caved or full of water. As a result, sampling was largely confined to dumps at the various workings.

Sample plans of the underground workings, copied from the old Dome Mountain Gold records, are on file, and copies are included in this report. There is no reason to question the authenticity of these data.

CONCLUSIONS AND RECOMMENDATIONS.

The property is considered to be a good prospect. The Forks area is the most promising part of the property for the following reasons:-

1). Numerous high assay values according to Dome Mountain Co. sampling with general corroboration from 1963 sampling.

2) Indication of greatest widths of any of the showings (from old reports)

3) Intense hydrothermal alteration over a large area with Fuchsite ("mariposite").

4) No diamond drilling has been done on the property

5) No evidence of any previous geological mapping of the surface showings or underground workings.

The following work is recommended:

a) Cleaning out the known workings at the Forks to obtain geological information.

b) Surface diamond drilling to determine the number of veins and their extent along strike and down dip.

c) All core containing sulphides should be split and sent in for assay.

COST ESTIMATE.

1.	Cleaning out adits, re-timbering, etc.	$ 3,500.
2.	Pumping out Shaft	1,500.
3.	Diamond drilling - 2500 ft.@ $6.00/ft. (contract price, core boxes, etc.)	15,000.
4.	Engineering, supervision	2,000.
5.	Transportation, overhead (not otherwise included)	8,000.
	Total	$30,000.

Respectfully submitted,

G. R. Hilchey.

Vancouver, B. C.
August 13, 1963

APPENDIX A

CROWN GRANT MINERAL CLAIMS

Name	Lot No:
Telkwa	2915
Vancouver	2916
Victoria Fr.	2917
Freda	2918
Trail	2919
Wallace Fr.	2920
Trail Fr.	2921
Tom Fr.	2922
Bertha Fr.	2907
No. 1	2908
No. 2	2909
No. 3	2910
Wallace	2911
New York	2912
Josie	2913
No. 4	2914
Raven	2897
Porcupine	2899
Grizzly	2900
Triangle Fr.	2901
Elk	2902
Dome	2903
Snowdrop	2904
No. 6	2905
No. 5	2906
Hawk	2888
Eagle	2889
Whistler Fr.	2890
Eagle Fr.	2891
Whistler	2892
Ptarmigan	2893
Hercules	2894
Pioneer	2895
Gem	2896

situated in the Omineca M. D.
Range 5, Coast District.
c of t 7703D

34 claims - Total acerage = 1,391.29

APPENDIX "B"

SCHEDULE OF LOCATED MINERAL CLAIMS.

Name:		Record No:
SNO No.	1	20004
"	2	20005
"	3	20006
"	4	20007
"	5	20008
"	6	20009
"	7	20010
"	8	20011
"	9	20012
"	10	20013
"	11	20014
"	12	20015
"	13	20016
"	14	20017
"	15 FR.	20018
"	16 FR.	20019
"	17	20020
"	18 FR.	20021
"	19	20022
"	20	20023
"	21	20024
"	22	20025
"	23	20026
"	24	20027
"	25	20028
"	26	20029
"	27	20030
"	28	20031

The above 28 mineral claims were staked by G. R. Hilchey as agent for K. J. Springer on Domo Mountain in the Omineca Mining Division and are in good standing until June 10th, 1964.