ASSESSMENT REPORTS

Dawson M.D.

MAP No. 115 O 15 TYPE OF WORK: GEOLOGICAL, GEOCHEMICAL

091559

REPORT FILED UNDER	DAWSON ELDORADO GOLD EXPLORATIONS LTD.
DATE PERFORMED	June , 1984 DATE FILED: June 27, 1984
LOCATION – LAT.	63°48'N Portland-Lion Creeks, Yukon
LONG.	138°47'W
CLAIM Nos.	KLUN 1-32 YA65707-YA65738
WORK DONE BY	J.K. Mortensen (Archer, Cathro and Associates (1981) Ltd.)
WORK DONE FOR	Dawson Eldorado Gold Explorations Ltd.
REMARKS	

091559

The KLUN claims were covered by a regional soil sample grid during 1983; sample lines were 1 km apart with 250 m sample spacing and five lines passed across or near the property. Background values of gold and arsenic (15 ppm and 5 ppb respectively) were found in all but one sample (57 ppb Au). This suggests that either mineralization is limited and not of significant grade, or that conventional soil geochemical techniques are not capable of detecting the mineralization.

Samples of vein material collected by Debicki from both the Dominion and Gold Run showings contained no significant gold.

ARCHER, CATHRO
& ASSOCIATES (1981) LIMITED
CONSULTING GEOLOGICAL ENGINEERS

BOX 4127, 3125 THIRD AVENUE
WHITEHORSE, Y.T. Y1A 3S8

(403) 667-4415

Assessment Report

on

Klun 1-32 Claims

Dawson Mining District

NTS 115O/15

by

J.K. Mortensen, Ph.D.
Archer, Cathro & Associates (1981) Limited

June 13, 1984

091559

1016-510 WEST HASTINGS STREET, VANCOUVER, B.C. V6B 1L8

(604) 688-2568

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work for the amount of $ 5,235.76

D D Emond

for Regional Manager, Mineral Resources and Geological Services for Commissioner of Yukon Territory.

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Introduction

The Klun 1-32 claims were staked by Archer, Cathro & Associates (1981) Limited on behalf of Dawson Eldorado Gold Explorations Ltd. in June, 1983 to cover the old Dominion and Gold Run occurrences. Geochemical sampling and limited geological mapping of the property and adjacent areas was performed during 1983.

Location, Access and Vegetation

The property is located at the east end of Dominion Mountain and covers the headwaters of Portland and Lion Creeks (Figure 1). Access is from the Dominion Mountain-Gold Run Creek Road, which runs past the southern corner of the claim group.

Virtually the entire Klondike District, with the exception of the summit of King Solomon Dome, lies below treeline. Vegetation on south- and southwest-facing slopes consists of stands of aspen or mixed aspen and birch, with varying amounts of underbrush, which generally becomes denser at higher elevations. Permafrost is commonly absent on south-facing slopes, but is much more widespread on north-facing slopes. Such north-facing slopes are characterized by scattered scrub spruce or mixed spruce and aspen, with varying amounts of underbrush. The ground is commonly covered by very thick moss, which passes downward into frozen peat-like material and then into frozen soil.

History and Previous Work

The Dominion occurrence on the ridge northeast of Dominion Mountain was staked as the Jennie claims by F.W. Arnold in June, 1909 and restaked as Flora, etc claims about 1911 by Dr. S.J. Faulkner. Development consisted on one trench

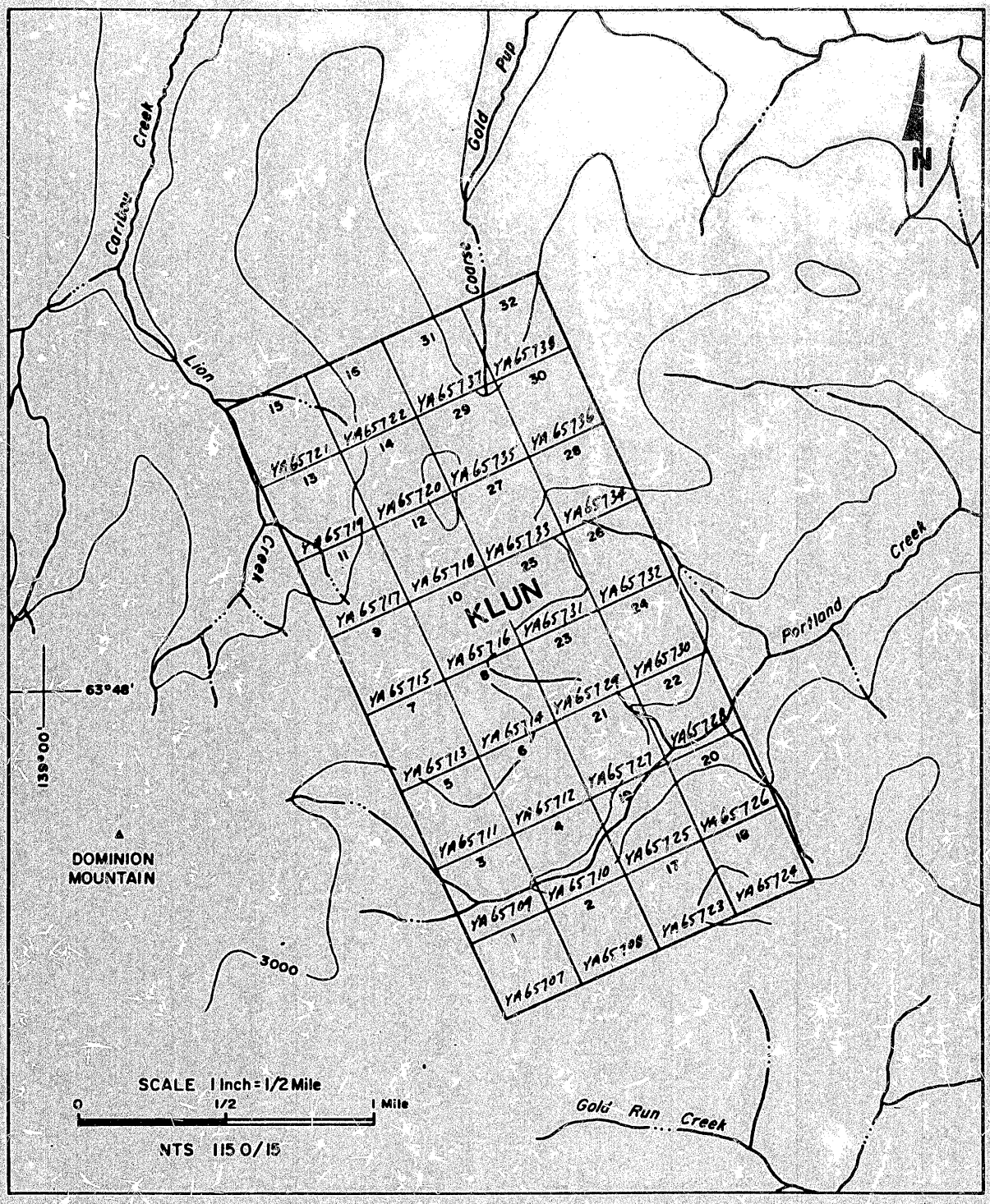


Figure 1

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LOCATION MAP
KLUN CLAIMS
KLONDIKE PROJECT

in 1912.

The Gold Run occurrence on the right limit of upper Portland Creek was staked as the MacKay, Pioneer, etc claims (12000) (Gold Run Group) commencing in August, 1910 by W.D. MacKay, N.J. Donahue and associates, who explored with a total of about 100 ft of shafting and 75 ft of adits at several locations plus extensive hand trenching until 1924.

Regional Geology

The Klondike District lies within the unglaciated portion of the Northern Cordillera, and experienced strong surface weathering during the early and mid-Tertiary. As a result, bedrock exposure is extremely limited (considerably less than one percent), and surface weathering locally extends to depths of 80 m or more. The scarcity of outcrop necessitates a regional approach to understanding the geology of individual properties (many properties in the Klondike have only one or two outcrops on them). In the following report, the property geology is discussed and interpreted in the light of regional mapping carried out by the writer during the 1983 field season. The bedrock geology of the property and adjacent areas is based on data collected from available bedrock and subcrop (which is usually confined to road cuts, placer workings, and ridge crests), as well as the distribution of various lithologies as rock chips in the overburden. Since solifluction and downslope creep are the only processes operating to transport the rock chips, the latter technique can be used (with caution) to approximately locate lithological contacts in overburden-covered areas.

The Klondike District is underlain by a series of thrust sheets that are separated by regional-scale thrust faults. Discontinuous lenses of altered

ultrabasic rocks occur along the thrust faults. The rock units that make up the various thrust sheets are described briefly in Table I.

An early pre-thrusting, metamorphic foliation that parallels compositional layering is pervasive in all rock units except the ultrabasic rocks and the younger intrusions and volcanic rocks (units KTqfp, KTvs and Mzd). The thrust faults are deformed by at least three younger phases of deformation. The second phase event (F_2) produced west- to northwest-trending folds that are developed to varying degrees throughout the district. The third phase (F_3) includes northwest-trending folds and is only recognized in the northeastern portion of the district. Late, small-scale warping (F_4) is noted locally. Little evidence was seen for large-scale steep faulting in the area, although abundant topographic linears suggest that small-scale steep faults may be common.

Two distinct generations of quartz veins are recognized regionally in the Klondike District. The most abundant is an early generation of metamorphic quartz sweats (referred to as "foliaform quartz") that comprise narrow lenses and pods parallel to the F_1 foliation. Minor amounts of ferroan carbonate, pyrite and white to pale pink feldspar occur locally in the foliaform quartz. A younger set of quartz veins (referred to as "discordant quartz") form tabular veins that crosscut compositional layering in the schists as well as the F_1 and F_2 foliations. These veins reach 2.5 m in thickness in parts of the Klondike District. Pyrite is commonly present, usually as narrow selvages. Other sulphides, notably galena, sphalerite, tetrahedrite, stibnite, chalcopyrite and arsenopyrite, and free gold occur in trace elements in the discordant veins. Manganese staining is common on weathered samples of vein material. Sampling of veins from throughout the Klondike has shown that gold is confined almost exclusively to the discordant veins.

TABLE I

LITHOLOGIC UNITS IN THE KLONDIKE DISTRICT

Unit	Map Symbol	Description
15	KTqfp	- unfoliated quartz-feldspar porphyry
14	KTvs	- interbedded immature clastic rocks and intermediate to mafic volcanic rocks
13	Mzd	- unfoliated hornblende diorite and quartz diorite
12a	Pzub	- variably altered ultrabasic rocks (serpentinite, talc-carbonate rock, and silica-carbonate rock)
12b	Pzgr	- massive to weakly foliated greenstone
11	Pzm	- schistose impure marble
10	Pzmq	- muscovitic quartzite
9	Pzqs	- carbonaceous quartz-muscovite phyllite and schist (locally includes minor 6 undifferentiated)
8	Pzmcq	- fine-grained muscovitic and chloritic quartzite
7	Pzqms	- tan to rusty weathering quartz-muscovite, muscovite-quartz, and muscovite schist
6	Pzcs	- chlorite and chlorite-quartz-muscovite schist (includes minor amphibolite)
5	Pzqe	- "quartz-eye schist" (quartz-muscovite schist with abundant clear to bluish quartz [±feldspar] augen)
4	Pzqd	- weakly to moderately foliated, medium-grained, quartz dioritic orthogneiss
3	Pzmg	- weakly to strongly foliated metagabbro
2	Pzmd	- weakly to strongly foliated metadiorite
1	Pzog	- strongly foliated granitic to quartz monzonitic orthogneiss

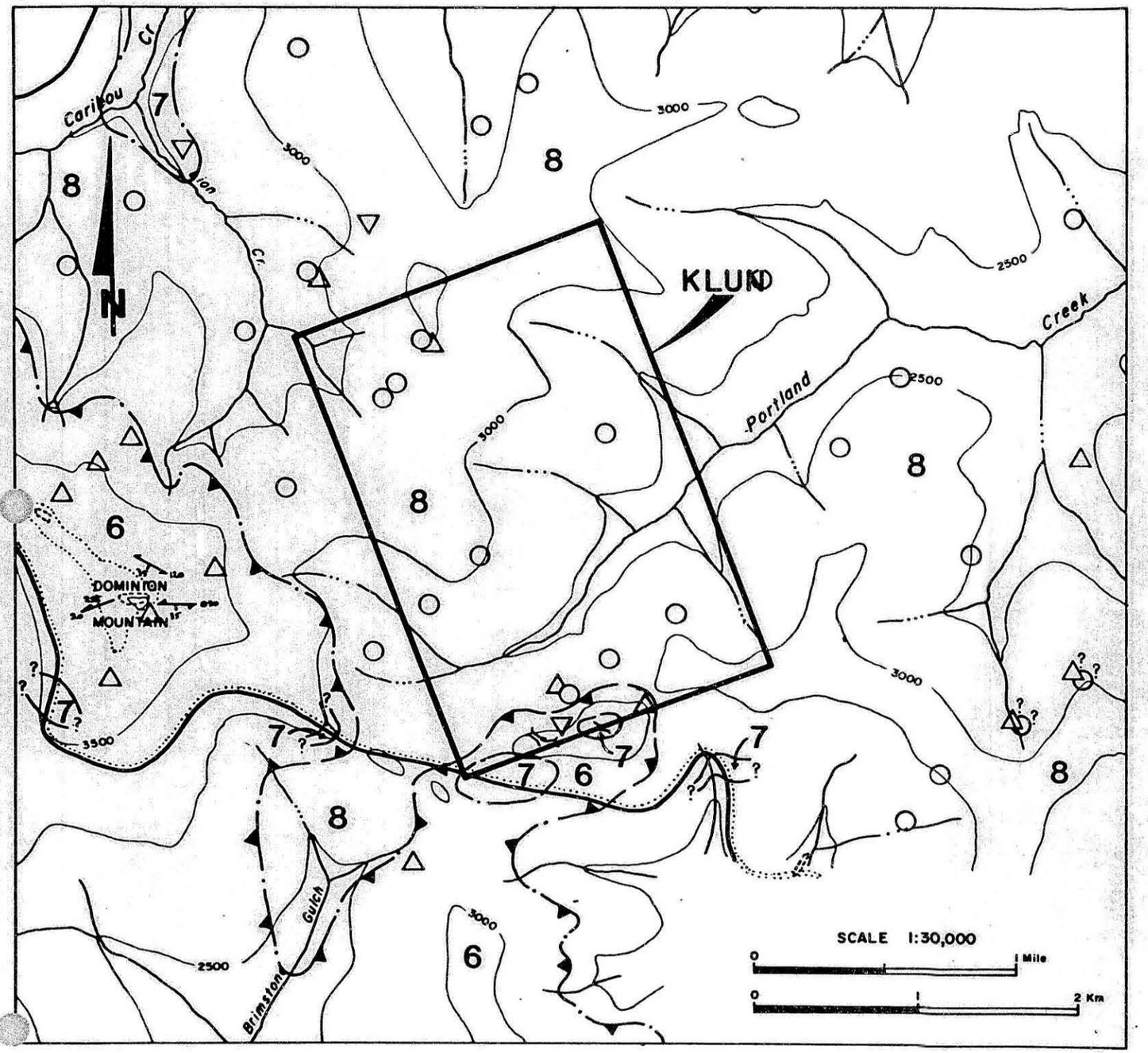
Property Geology

As shown in Figure 2, the claim group is underlain mainly by micaceous quartzites and feldspathic quartzites of Unit 8, and includes a portion of an overthrust sheet of chlorite schist (Unit 6) with minor rusty quartz-muscovite schist (Unit 7) near the southern edge. Compositional layering in both the quartzites and the chlorite schist appears to be subhorizontal in this area. Foliaform quartz lenses to 0.5 m in thickness are very abundant in both the chlorite and quartz-muscovite schist, and to a lesser extent in the quartzite.

Mineralization

The Dominion (also called the Patterson or Queen Anne) occurrence was examined by MacLean in 1912. His description is as follows:

> "Two exposures of quartz occur at a distance of about 350 feet E. and W. from each other. The eastern exposure, on the summit of the divide, is made by a cross-cut trench, 45 feet long, N. and S., and 4 feet deep, while the western exposure consists of a massive outcrop of quartz fully 12 feet wide. The supposition is that a vein occurs striking easterly and westerly, and that in case of the first mentioned trench, this vein has trifurcated, the three resultant branches being each about 3 feet wide, and separated by schist, 6 feet and 9 feet in width respectively.
>
> The quartz is milky and opaque with rusty cleavage faces, apparently lacking in minerals, but, when crushed and panned, it exhibited small percentages of galena and pyrite, and in one sample of quartz from the trench colours of gold were seen.
>
> Six samples were taken, but, when assayed, they gave no values."



LEGEND

- thrust fault (defined, inferred)
- lithological contact (defined, inferred)
- outcrop and disrupted outcrop
- subcrop and local float in overburden
- lithological identification of rock chips in soil (Units 3, 5, 6, 7, 8, 9, 15 respectively)
- trench or hand pit
- adit
- shaft
- F_1 foliation, parallels compositional layering (strike, dip)
- F_2 foliation (strike, dip)
- F_2 crenulation lineation (trend, plunge)
- soil sample location (As content in ppm by ICP, Au content in ppb, NAA)
- silt sample location (" " ")
- geochemical sample of fines in waste dumps (" " ")

Figure 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

BEDROCK GEOLOGY

KLUN PROPERTY AND VICINITY

KLONDIKE DISTRICT, YUKON

KLONDIKE PROJECT

Only one of the sixteen claims that were being actively explored at that time was visited by MacLean, and it is presumed that other workings are present elsewhere in the immediate area.

MacLean (1914) also describes the Gold Run occurrence. In 1912, the workings present at this occurrence included several trenches on the ridge crest between upper Portland Creek and the head of Gold Run Creek and a small open cut on the slope between the ridge crest and Portland Creek. The ridge trenches were examined by the writer during 1983. All of the quartz present is of the foliaform variety. Three samples were assayed by MacLean and were barren of Au and Ag. The open cut north of the ridge could not be located. MacLean (1914, pp.83-84) described the occurrence as follows:

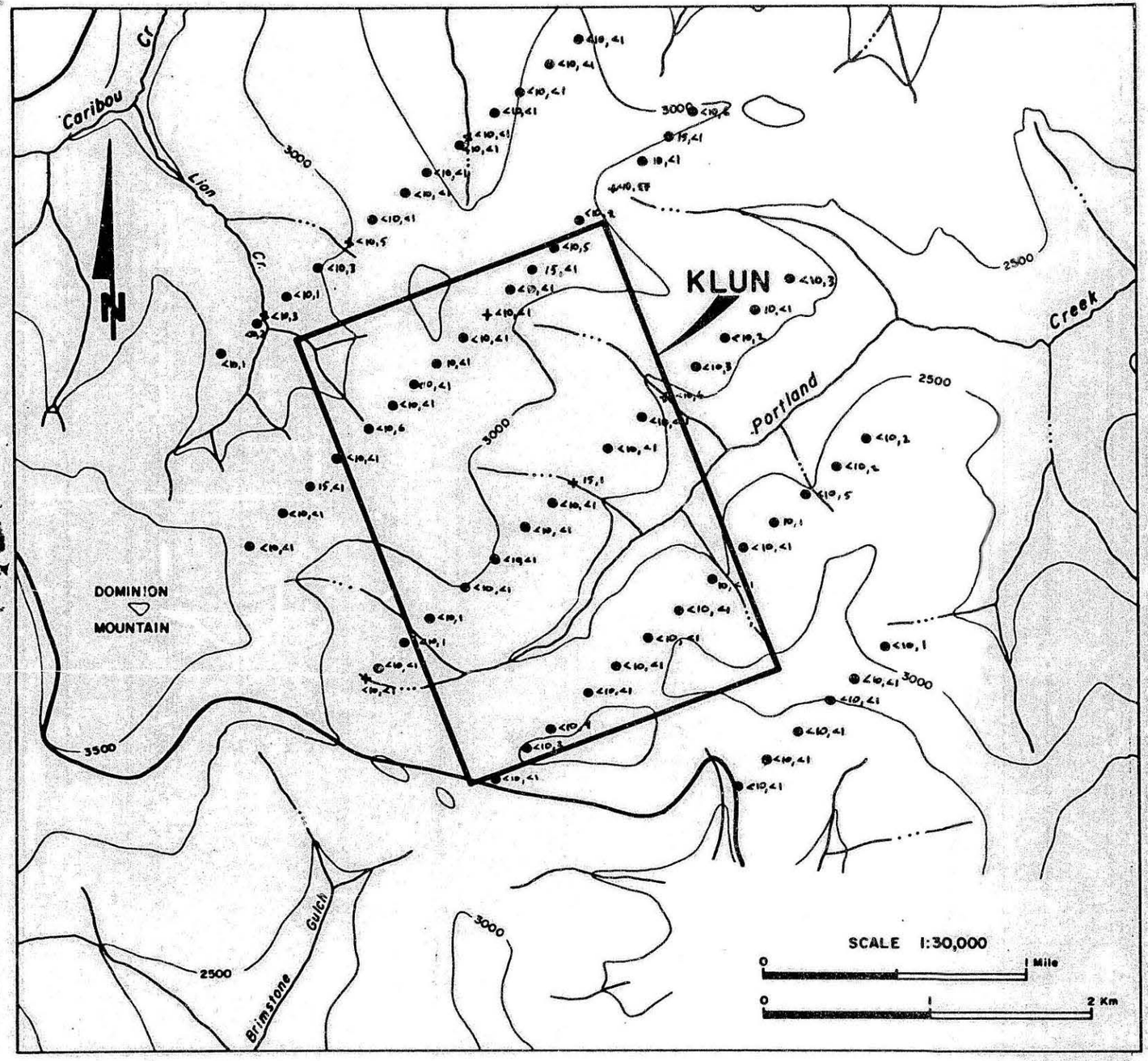
> " ... outcroppings of white quartz occur for a distance of several hundred feet in a southeasterly-northwesterly direction from the ridge towards Portland Gulch, where the vein is uncovered by an open-cut, which is at an elevation about 300 feet above the bed of the gulch and distant 1,200 to 1,500 feet from its right limit. This open-cut is 8 feet long, 4 feet wide and 6 feet in depth at the face. It is made into the side hill and uncovers a vein 18" wide, which dips 50° N.E., cutting the schists, but striking with them.
>
> This vein has the appearance of a regular fissure, but the general lack of continuity of the quartz veins in this vicinity causes one to hesitate in pronouncing it a persistent one without more proof than present development affords. It is altogether likely, however, that it will be found to follow the line of outcroppings referred to above as occurring for a distance of several hundred feet.

A small showing of free gold was here found in the quartz. Some galena was also noted. The quartz is generally very white, though occasional stains, due to iron oxides, were seen.

Three samples of quartz were taken from this lead. One of them from an outcrop, and two from the above open-cut, all panned colours of gold, and the two latter assayed $34.90 (1.75 oz/ton) and $3.42 (0.17 oz/ton) respectively." (Gold at $20/ton and silver at $0.60/oz.)

Geochemistry

The Klun claims and adjacent areas were covered by a regional soil sample grid during the 1983 field season. Five of the sample lines, which were spaced approximately 1 km apart with 250 m sample spacing, passed across or near the property. The contents of soil samples in this area is shown in Figure 3 (values for As and Au only are plotted). The As and Au values are in almost all cases at or below calculated background levels for the Klondike area (15 ppm and 5 ppb, respectively). A single high Au value (57 ppb) in a soil sample taken just off the northeast corner of the property may reflect the gold-bearing quartz vein described by MacLean on the ridge crest in this area. With this exception, the soil geochemical sampling failed to detect the gold-bearing vein systems known to be present from MacLean's work. This indicates either that the vein systems are of very limited extent and grade, or that geochemical techniques other than conventional soil geochemistry will be required to explore the property.



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- soil sample location (As content in ppm by ICP, Au content in ppb, NAA)
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Figure 3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

SOIL AND SILT GEOCHEMISTRY

KLUN PROPERTY AND VICINITY

KLONDIKE DISTRICT, YUKON

KLONDIKE PROJECT

Summary and Conclusions

The Klun claims are underlain mainly by micaceous quartzites that represent the lower plate beneath a regional-scale thrust fault that crops out near the southern margin of the claim group. Chlorite and minor quartz-muscovite schist comprise the upper plate of the thrust.

Gold-bearing quartz veins occur on the ridge crest in the northern part of the property and above the right limit of Portland Creek near the southern edge of the property. Assays as high as 1.75 oz/ton Au have been obtained from the vein material.

With a single exception, wide-spaced soil geochemical lines failed to detect known gold mineralization. This suggests either that mineralization is limited and not of significant grade on the property, or that conventional soil geochemical techniques are not capable of detecting the mineralization.

The potential of the property remains largely unknown. Future work should include locating and re-sampling all old workings, establishing a detailed soil sampling grid in the immediate area of known mineralization to evaluate the use of conventional soil geochemistry and other geochemical techniques to detect mineralization. The most successful technique should then be applied over the entire property. Bulldozer trenching to assess the nature and extent of known vein systems may be warranted depending on the results of re-sampling the showings.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

/mjm

J.K. Mortensen, Ph.D.

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APPENDIX I

CERTIFICATE

I, James K. Mortensen, with residential address in Vancouver, British Columbia, do hereby declare

1. I am a geologist in the employ of Archer, Cathro & Associates (1981) Limited, 1016-510 West Hastings Street, Vancouver, B.C. V6B 1L8.

2. I am a graduate in geological engineering of the University of British Columbia (B.A.Sc., 1977, M.A.Sc., 1979) and graduate in geology of The University of California, Santa Barbara (PhD., 1983).

3. I am a member of the Geological Association of Canada and the Geological Society of America.

4. I am a registered Engineer-in-Training in the Association of Professional Engineers of British Columbia.

5. I have practised my profession as a geologist for the past eleven years.

6. I have supervised the work described in this report.

Respectfully submitted,

J.K. Mortensen, PhD.

/mc

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APPENDIX II

REFERENCES

MacLean, T.A., 1914, Lode Mining in Yukon, Mines Branch Publication 222, 205 p

Northern Cordillera Mineral Inventory, NTS 1150/15, Occurrence 63 and 65, Archer, Cathro & Associates (1981) Limited, private publication

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APPENDIX III

April 17, 1984

Mining Recorder,
Dawson Mining District,
Box 249,
Dawson, Y.T.
Y0B 1G0

Dear Sir:

Re: Application of Regional Mapping Costs in Klondike District to Property Assessment

Part of the assessment work for 1983-84 filed on quartz claims in the Klondike area held by Dawson Eldorado Gold Explorations Ltd. or jointly by Dawson Eldorado and Archer, Cathro & Associates (1981) Limited consists of geological mapping outside of the individual properties for which the work was filed. We believe that this is justified because of the extreme scarcity of outcrop in the area and the lack of a detailed geological map of the Klondike which makes it impossible to interpret the geology of a particular property based solely on the very few bedrock exposures within the claim boundaries. In order to understand the bedrock geology of a claim group, it is therefore necessary to carry out more reconnaissance scale mapping in the general area of the property and extrapolate the regional geology onto the property.

Yours truly,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

/mc

J.K. Mortensen.

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