

013259

2. QUARTZ LAKE AREA

Introduction

On the strength of air-photo interpretation and a helicopter reconnaissance previously done by Aho and Davis, the area delineated on the location map, approx. 100 square miles, was closely prospected and silt sampled (tests for zinc and copper). Geological mapping was not as intensive.

Prospectors Mickle and Anderson spent approximately 3 weeks in the area, Davis, 2 days, and the writer 6 days.

The McMillan property was closely looked at to determine the favourable structural environment.

Weather conditions during this time considerably hindered progress.

Geology

Rock types favourable to mineralization are widespread in the form of limestone, limey phyllite and limey shale. Others are quartzite, sandstone and quartz diorite. The sedimentary rocks are generally of low metamorphic grade but increase towards the north.

The light green phyllite, varying to a schist, is thin-laminated and contains lenses and stringers of calcite. Frequently replacement mineralized with pyrite, limonite and siderite, the McMillan showing of pyrite, galena, sphalerite occurs mainly in this type.

The shale is generally black, thin laminated or thin bedded, fine grain and equigranular. Frequently limey, it may contain pyrite mineralization.

The grey, micaceous, quartzite forms many of the higher areas. Sometimes laminated and phyllitic, it can take on crinkling and accordian folding. It might be more correct to call it a metamorphosed greywacke. The dirty sandstones interbedding with the quartzites are probably just a lesser grade.

Quartz-pebble conglomerate only occurs at the McMillan showing as a small outcrop beneath some phyllite. It has medium to coarse grained white pebbles with little matrix.

Other than pyritization (showing mainly in stream outcrops), the only other mineralization found was galena in a little float

1½ miles SW of Moose Lake.

Interbedding of phyllite-quartzite and shale-phyllite-limestone is very common.

Structurally, the area is complex. Bedding and foliation differ widely, though the most common is a NE strike and moderate NW dip. North, north-west, and westerly trending faults are evidenced topographically and by rust zones and gouge. The skarn zones of the McMillan showing occur on what are reportedly thrust faults, however, irregular folding evidenced in a cross-section would indicate some sort of a relationship of folding-faulting, perhaps a gleits-bretter effect.

Silt Sampling

Initially, many of the samples were field tested for zinc. These indicated the McMillan showing may be larger than the reported 1800 foot length and 250 ft. width. High readings were obtained in the next creek to the east; however, nothing further to the west was indicated.

Further laboratory results indicate some anomalous zinc areas (with 120 to 130 ppm) NNW of Quartz Lake and West of Moose Lake, also the high of land East of Moose Lake which is associated with the Quartz diorite intrusion, and another high of land North of Quartz creek where it drains Quartz Lake.

Anomalous copper concentrations of 30 to 50 ppm were found in three samples 2 miles south of Quartz Lake, in the one sample north of Quartz Creek, and two samples NW of Moose Lake.

High copper concentrations usually coincide with high zinc concentrations, but the converse is not true.

Background zinc concentrations are probably between 80 and 100 ppm. This would correspond to about 1½ ml. of dithizone in the field testing. Background copper concentration is about 20 ppm.

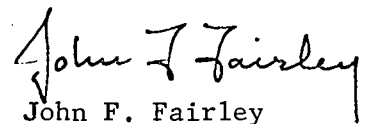
Zinc and copper concentrations toward the north and south ends of the prospected area become less.

Recommendations

Since much of the geology shown on the map is prospector information, and also since there are some anomalous geochemical areas, further geologic mapping, structural interpretation and

geochemistry or geophysics of these anomalous areas could be recommended if any other work is being done in the general area. A geologist and assistant could accomplish this in about 10 days with reasonable conditions.

The former owners of the McMillan Property did a great deal of diamond drilling. This is probably the only way of properly recognizing the structure since there is a scarcity of outcrop. Much of the core remains in order on the sites and could be logged.



John F. Fairley

November, 1963.

Quincy Lake

Pb. 5% 1,000,000 tons
 Zn - 10%
 Ag. 1.9 oz/ton

Metal in Conc.

	Pb.	Zn.
Pb.	70%	
Zn.		55%
Ag.	25 oz/ton	

Gross metal conc. lb.

Pb.	1400 lb.	
Zn		1100 lb
Ag.	25	

Concentration values

	<u>Pb. conc</u>		
Pb	$(.70 \times .95) \frac{2000}{2240} \times 82 \times 3.04$	=	\$ 149.00
Ag.	$(.95 \times 25) 1.26 \times 1.08$	=	\$ 32.40
			\$ 181.40

Smelting + ~~transport~~ shipping
 400,000 lb @ 5.0¢ = 20.00
 100% 3.3 3.30

32.00
~~3.50~~

55.50

FOB Mine = 125.90

400
 .05
 20.00

	<u>Zn conc</u>		
Zn	$(.85 \times .55) \frac{2100}{2240} \times 110.00 \times 3.04$	=	139.00
		-	56 + 46
			\$ 29.00
			59.00

FOB Mine
 Pb - .090
 Zn - .0026
 16.54

Diluted Grade
15%

Pb	4.5%	90 lb
Zn	9.0%	180 lb.

Recovery

Pb.	85%	77 lb
Zn	75%	133 lb

Value. Pmt to own

Pb	77 x .090	= \$ 6.90
Zn	133 x .054	= \$ 7.39
		\$ 10.44
		\$ 13.60

~~Costs based on 1,000 lbs. eggs 3 yrs life.~~

Mining	\$ 5.00 / ton	1,000 lbs. #
Mulch	1.50 / ton	Capital cost: 5m
Overhead	.50 / ton	\$ 5 / ton

7.00

Went off: ~~2.00~~
9.00

- \$ 12.00

5m tons - 10m #

\$ 2 / ton

1.44 / ton

\$ 1440 / day

.5 m / day

\$ 17.00

4.60

\$ 4,600.00

1.6m

3yrs

McMullan Property - Quarry Lake.
Loc 60°29' long 127°57' Elev 3500
E bank of Mine Creek

Size and Grade

length 1800' breadth 250' depth -
Tonn 1,000,000 Avg. grade 1.8 of Ag, 5.0 Pb, 10.2 Zn

Long flat lying lens of Pb-Zn min. replacing lst, lying
qtzite.

Rocks

Core - light to dark grey massive x-lim lst. Mineralogically at bottom
or top of lst band, or completely replace it. S&L and coexisting rock
in lst breccia, or cgl., blue grey subangular to subrounded frags
of to 2' ϕ .

Hanging wall. Interbedded greyish qtz + brown - olive green
argillite, locally either may predominate but to N qtzite become
dominant. Apparently conformable with lst.

Footwall. Brown to silver-pink brown argillite, mild
slaty cleavage; with thin interbeds of light grey fine
grained qtzite. Appears conformable with lst.

Stk N40-70 W, dip 10-25° NE.

<u>Mineralogy</u>	pyrite	46%
	sphal	15%
	Galena	6%

Appears to be localized by 2 conditions

(a) Stratigraphic - in lot str NW / dip gently NE
Continued lot grading into quartzitic lot &
calcareous quartzite.

(b) Structural - in HW at large low angle
thrust fcs. (locally called Block Fault)
str N 10° E / 15-20 SE

- Thrust along fcs shattered rx in HW +
developed subsidiary faults and fractures to serve as
fuders.

- These terminate downroad against the Block
fault.
- Mineralization from fuders spread into receptor
lot or shattered quartzite nearby.

- m gneiss
- = shale
- ~ phyllite
- ≡ limestone
- o quartzite
- sst.
- x intrusive
- v volcanic
- c conglomerate

- f w no probable fault
- bedding folia
- folia
- jointing

- == road
- trail

Silt Sampling Results
for Zw.

- 3 and over
 - 2 ~~ml~~, 2 1/2
 - 1 ~~ml~~, 1 1/2
 - nil → 1
- } ml. of D₂

○ significance
Zw
Oler

Values up to 1 1/2 are probably irrelevant.

— mineralization

limy, phyllite
shale.
qtz, mica
conglomerate
sandstone
grey, micac, quartzites

TOP EDGE COAL MAP SHEET

N.

- X A.P. PAN SAMPLES
- X A.M. ROCK SAMPLES
- X A.V.M. SILT SAMPLES
- LIME STONE
- ARGILLITE-SHALE-SLATE
- ~ ~ ~ SCHIST, PHYLLITE
- ... SANDSTONE
- QUARTZITE

← TO COAL R.

← TO COAL R.

ROCK RIVER DRAINAGE

COAL DRAINAGE

CM2

CM1

CAMP

SAW

AK30

AK33

AK31

AK32

AK34

AK35

AK36

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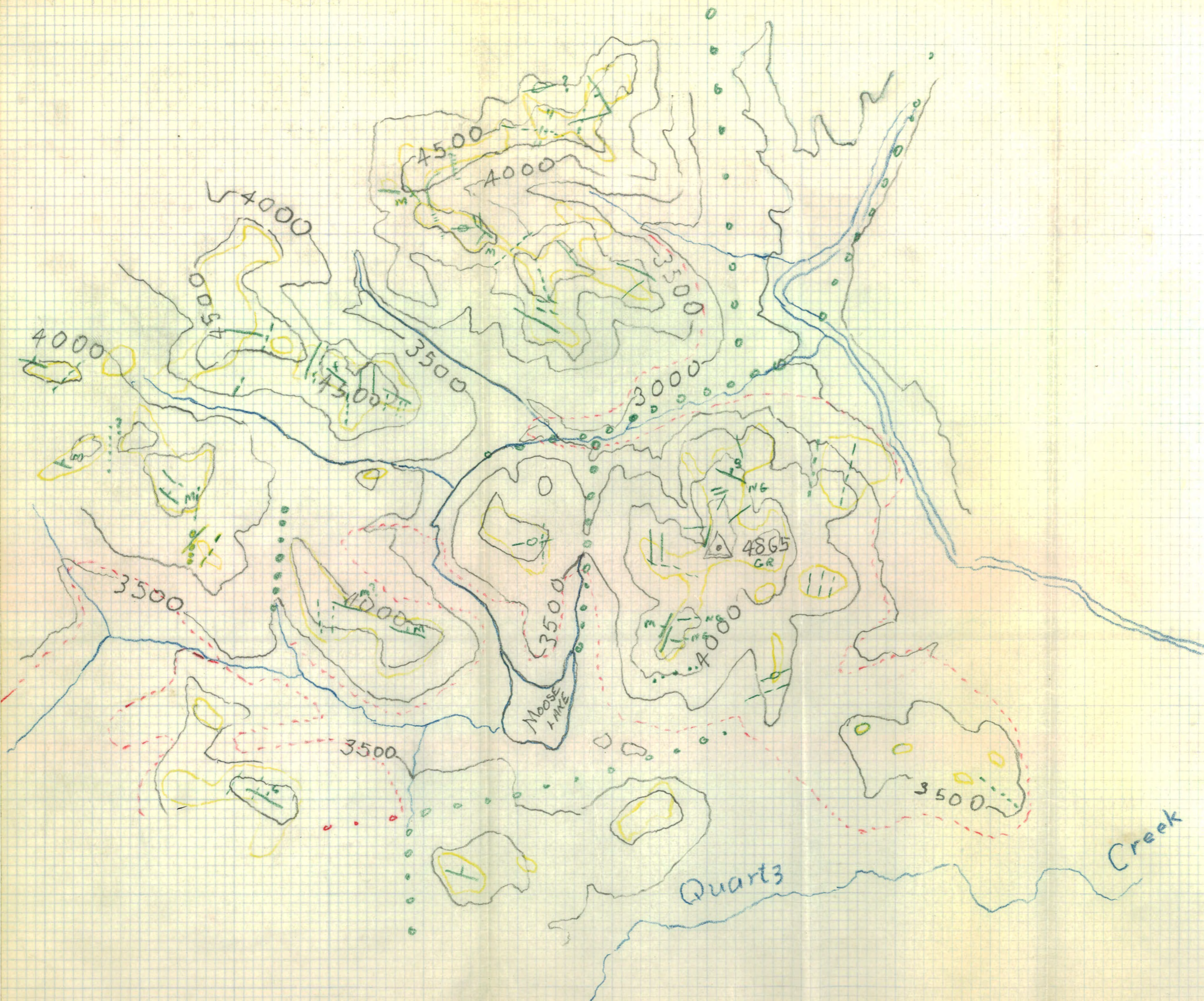
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- OBSCURE
- CONTOUR LINES
- LIGHT OVERBURDEN
- DIVIDE OVERBURDEN OUTCROP
-
- ~~~~~ FAULTS KNOWN & INFERRED
- ts tmtc kf BEDDING - STEEP, MODERATE, GENTLE, UNKNOWN
- oooooo BURIED OR INFERRED PHYSIOGRAPHIC LINEAR (UNKNOWN)
- x MINERALIZATION