for 8

FILE

N.T.S. 92-P

REPORT

ON

SOUTH CARIBOO, B. C.

1966

KAMLOOPS

MINING DIVISION

Vancouver, B.C.
Jan. 31, 1967

H.S. Lazenby

Feb. 1/67 Original to Dr. A.S. Dadson, Toronto
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JANUARY 4, 1967

H.S. Lazenby, Geologist

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REPORT ON THE

SOUTH CARIBOO, B.C.

1966

SUMMARY & CONCLUSIONS

During the 1966 field season, a geochemical crew averaging fourteen men operated out of Little Fort, B. C.

The program was a continuation of that started in 1965.

18,000 soil and silt samples were collected and sent to the Vancouver laboratory, where they were assayed for Copper and Molybdenum: the Copper by the 0.5 normal hydrochloric acid extractable Copper method and the Molybdenum by the alkaline fusion method.

417 Claims were staked; some to enable the crews to work areas unmolested; others to acquire ground in areas showing encouraging results.

Some of these results indicate that further work should be done in 1967.

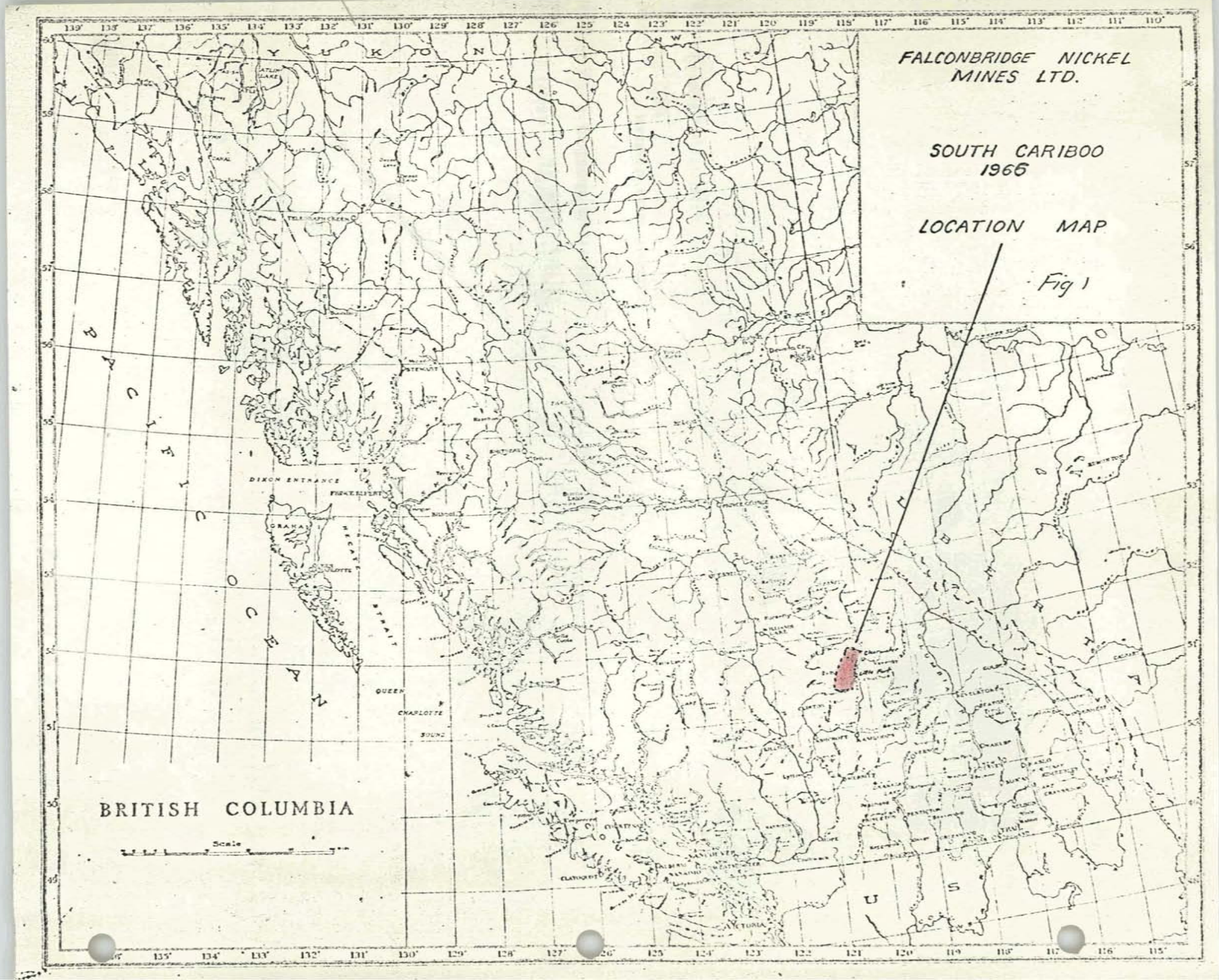
LOCATION:

The area worked lies to the west of the North Thompson River between the towns of Barriere and Clearwater (Fig. 1).

Within this area specific targets were picked for detailed grid sampling. These targets have been named Twin, Bear, Ice, Mud, Wet-Sun-Aku, and Bonaparte. Figure 2 illustrates their location.

CLIMATE

The climate of the area varies considerably from valley bottom to mountain top. Little Fort is free of snow for about eight months per year; elevations above five thousand feet for only four (mid-June to mid-October).


FALCONBRIDGE NICKEL MINES LTD.
SOUTH CARIBOO 1966
LOCATION MAP
Fig 1
BRITISH COLUMBIA
Scale
YUKON
PACIFIC OCEAN
DIXON ENTRANCE
HECATE STRAIT
QUEEN CHARLOTTE SOUND
VICTORIA

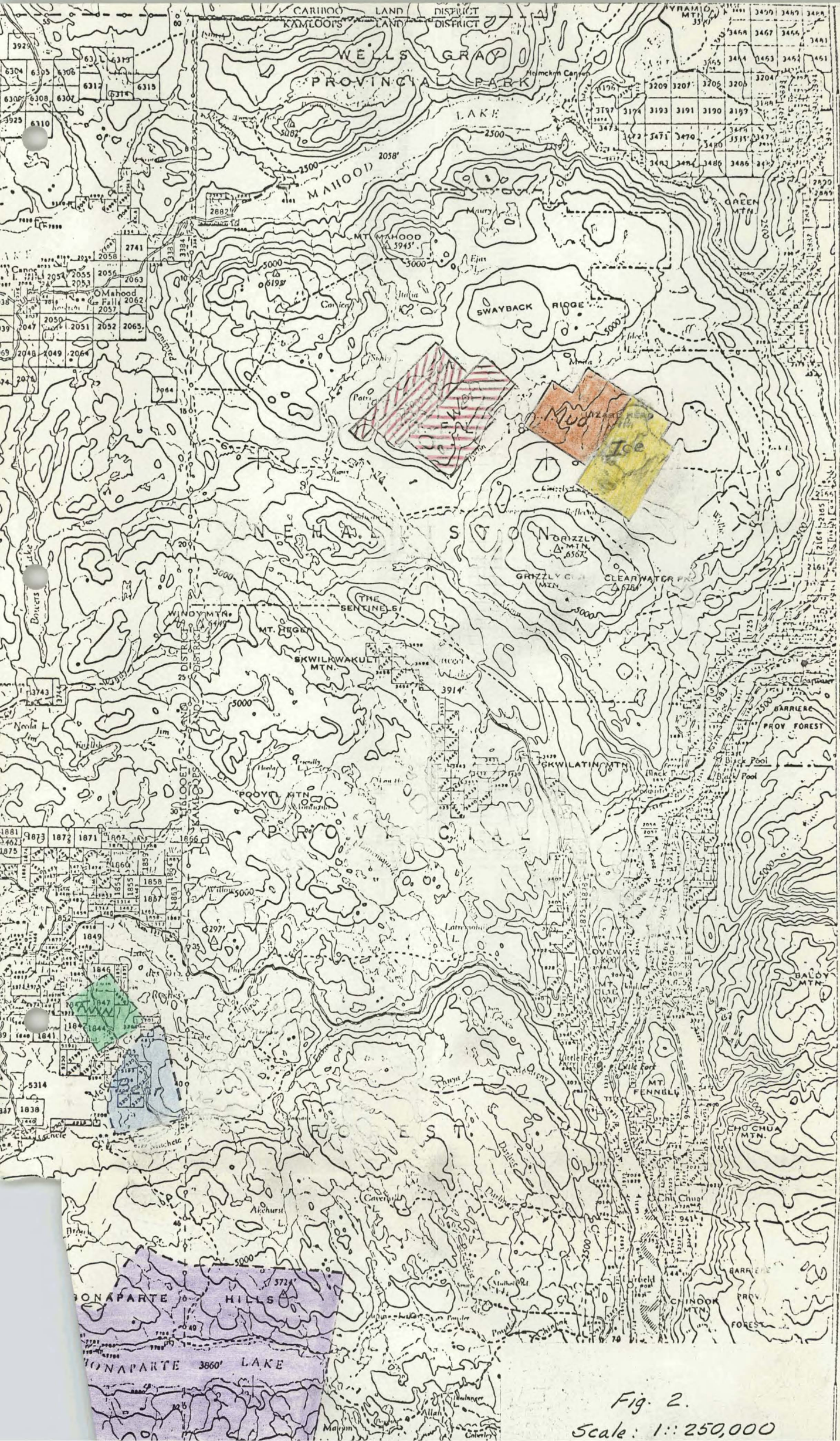


Fig. 2.

Scale: 1:250,000

Vegetation is mixed. Generally, at higher elevations the north and east slopes are predominantly balsam and spruce with occasional thickets of cedar, while south and west slopes contain a good deal of poplar. Many flat lying areas (Tertiary volcanics?) are covered with pine. There is very little underbrush away from the creeks.

CREW

The crew consisted of the writer plus three - 4 man parties. On two occasions, an independant prospector was used.

Radio contact was maintained between all field parties and Little Fort.

TWIN PROJECT

The Twin project is located approximately two miles down the Montana Lake road, which, in turn, is approximately two and a half miles east of Bridge Lake on the road to Little Fort.

This area was chosen as it covers a quartz diorite - volcanic contact along which minor amounts of molybdenite were seen by the writer on a northeast trending joint system in the quartz diorite. Float in the area is of the same type of rock, with variants approaching quartz monzonite in composition.

The area was worked during the latter part of May and was used as a shakedown project for one of the field crews while waiting for snow to melt in the Clearwater and Bonaparte areas.

A pace and compass grid was laid out with grid lines 500 feet apart and norman to the direction of ice flow. A total of 920 soil samples were taken at 200 foot intervals along these lines and assayed for copper and molybdenum.

Results

Results of these assays (Fig. SC-1-66) failed to reveal anything to justify further work in the area. No meaningful geochemical pattern was established. From the field sheets it can be seen that high copper values correspond with organic samples and, in general, follow drainage patterns. Molybdenum values are neither consistant nor widespread.

BEAR PROJECT

The Bear project is located approximately one-half mile south of the Twin project and extends about two and a half miles south to Machette Lake.

The area was chosen because of its proximity to the Twin project and because the float was of the same type as that on the Twin project.

The area was worked in conjunction with the Twin area and was used as a shakedown project for the other two field crews.

Work procedures were the same as those used on the Twin grid. A total of 1,436 samples were taken.

Results of this work (Fig. SC-2-66) appear to reinforce the conclusions drawn from work on the Twin grid. No further work need be done in the area.

ICE

The Ice block of 132 claims (Fig. 3) was staked partly to cover a molybdenum anomalous area north of Reflector Lake and partly to enable us to investigate the Lizard Head Mountain area unmolested. A strong lineament visible on air photos (Fig. 3) passes up E. Brookfield Creek, through the anomalous area, along Cedar Creek and Colborne Creek. With G.S.C. Map 3-1966 (Bonaparte River - 92-P) due out momentarily, it was felt that a good deal of company would soon be in the country.

2,756 samples were taken (Fig. SC-3-66) at 200 foot intervals along lines 500 feet apart running normal to the location lines. The location lines parallel the direction of ice flow in the area.

Results

Assay results of the samples are plotted on Fig. SC-3-66.

From this plan it can be seen that the molybdenum anomaly is still very much in evidence. Because there is so much glacial debris in the area, it is difficult to say whether it extends northerly, or whether there is a second anomalous area to the north. In any event, a further look at the area is warranted.

Recommendations

Until such time as we can gain more information on how to proceed with this anomaly, we should not make any elaborate plans for its development. Enough work should be done to enable us to hold those claims which we feel have some potential. It is hoped that information will be gained from work on the Wet-Sun-Aku block which will help in our approach to the Ice block.

In view of the fact that the reflection seismograph is not reliable in this type of country, an overburden survey seems to be out of the picture. Therefore, a bulldozer should be utilized to do enough trenching to keep the claims in good standing. The trenching should be done somewhere in the anomalous area as close to bedrock as possible with the hope that some geological knowledge can be brought to light. It could probably be done fairly quickly by hiring a Cat and operator from the Clearwater Timber Products people.

Because of the lack of geochemical kicks on the northeast corner of the property, it appears safe to drop 14 of the claims without hindering the potential of the block. Claims Ice #19,20, 42, 44, 45, 46, 47, 48, 75, 76, 103, 104, 131, and 132 should be allowed to lapse.

MUD

The Mud block (104 claims) was staked in conjunction with the Ice block. Initially, staking was to cover Pine Hill, a topographic high, from which a few goechemical 'kicks' were obtained in 1965. The report that molybdenum bearing float had been found between here and the Ice block caused us to stake that ground as well.

2,047 soil and silt samples were taken, the anomalous values of which are shown on Fig. SC-3-66.

Results

As with the Ice block, two anomalous areas are indicated with the possibility of them being both ends of the same anomaly.

Recommendations

As these claims are adjacent to the Ice claims, they should be grouped with the Ice claims so that any assessment work can be done on the Ice block. Because of their apparent worthlessness, the following 18 Mud claims should be allowed to lapse: Mud #83, 84, 85, 86, 87, 88, 91, 92, 93, 94, 95, 96, 99, 100, 101, 102, 103, 104.

WET-SUN-AKU

The Wet-Sun-Aku block was staked to cover an anomalous area initially discovered through silt sampling by Norman Anderson. To date, this block comprises 181 claims; 91 Wet, 52 Sun, and 38 Aku.

4,237 soil and silt samples were collected over an area covering all of the Wet and Aku claims and part of the Sun claims.

Results

An area of anomalous molybdenum concentration 11,000 feet square has been outlined on the southwest corner of the block. (Fig. SC-4-66) The northwest extension of this anomaly has been indicated by silt sampling (Fig.). In addition, Mining Corp. has a large molybdenum anomaly bordering our claim boundary in this area.

Recommendations

(1) Two double rows of claims should be staked to the southwest of the anomalous area covering the high ground and extending at least as far as Coldscaur Flats.

(2) A tent camp should be set up somewhere in the anomalous area.

(3) The anomalous area should be covered by cut lines 200 feet apart, trending northwest-southeast. Soil samples should be taken at 200 foot intervals along these lines.

(4) Detailed surface mapping should be started, using the cut lines for control.

(5) Using the information obtained by the sampling and mapping, a trenching program should be started.

GENERAL OBSERVATIONS

The Clearwater Timber Products people have planned to put three roads into the area within the next few years. One of these roads is slated to go up Calvin Creek. If Falconbridge were to offer to contribute to the cost of this road, they might be able to advance its construction date to early 1967.

COMMENTS

Both the Ice-Mud and Wet-Sun-Aku blocks are located within the boundary of Tree Farm Licence #18. This tree farm is being logged by Clearwater Timber Products Ltd.

As we are planning to do work in the area which may result in our cutting down a fair amount of timber, it would be in the best interests of all concerned if we were to advise the following of our intentions:

1. B.C. Forest Service,
Victoria, B.C.

Jake Bergen
B.C. Forest Service
Clearwater, B.C.

2. Mr. R.W. Swanson (head man?)
   Clearwater Timber Products Ltd.
   10519 Jasper Avenue
   Edmonton, Alberta

3. Mr. ? Capostinsky (local head man)
   Clearwater Timber Products Ltd.
   Clearwater, B.C.

4. Mr. Don Baxter (forester)
   Clearwater Timber Products Ltd.
   Clearwater, B.C.

Over the past two years the Clearwater people have been extremely cooperative. A good deal of our success thus far can be attributed to the fact that we were able to have one of their maps in 1965 and thereby had the jump on those outfits which arrived in 1966. It would be wise to keep this relationship cordial.

Vancouver, B.C.
January 4, 1967

H.S. Lazenby,
Geologist

BONAPARTE AREA

Location and Access

Bonaparte Lake is situated twenty miles west of Barriere and seven miles south of Machete Lake (Bear Project). Access was by jeep road from Barriere to the east and from Eagan Lake to the northwest. A tent camp was established on the lakeshore near the east end and later moved to the west end. Transportation on the lake was by Peterborough freight canoe.

Bonaparte Lake is twelve miles in length and forms the bottom of a basin within the Fraser Plateau. The eastern half of the basin lies in the Kamloops Mining Division and Nehalliston Provincial Forest. Precipitation is greater and vegetation more dense than the western half which lies in the Clinton Mining Division.

The upper elevations of the surrounding hills are generally Tertiary volcanics which overlie the intrusives (see Map SC-5-66). Deep glacial till masks the bedrock in several lower areas, but outcrop is more extensive than first believed.

Field Work

A crew consisting of the author and three students worked the area from June 1st to September 7th. A total of 6219 samples were taken over a 90 square mile area. All streams flowing into Bonaparte Lake were silt sampled at 500' intervals. Since there is a low drainage density, additional soil sampling was required to obtain comprehensive ooverage. B horizon samples were taken at 400' intervals on pace and compass lines run 800' apart and trending NE - SW (see Map SC-6-66).

Conclusions

No significant copper or molybdenum anomalies are delineated from the sediment assays. Minor above-background concentrations are not supported by the soil analyses.

Two copper anomalies on soil sample lines 103-108 and 124 - 131 are on ground that is mostly glacial rubble with minor scattered outcrop of intrusive group 2 (see Map SC-5-66). Field observations indicate that group 2 is more heavily pyritized than group 1.

Recommendations

The two anomalous areas noted above should be investigated. More detailed soil traverses and prospecting may indicate the cause of the copper concentration.

Intrusive group 2 appears to be a favourable host rock. It extends to the south and west of the Bonaparte area and should be a target for 1967.

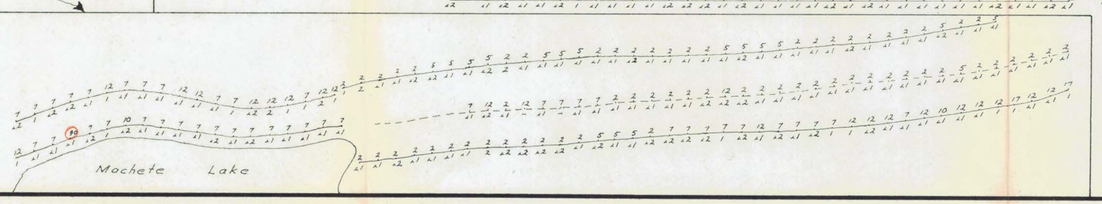
If the helicopter is available an effort should be made to locate from the air any windows in the Tertiary volcanics which form a vast sheet to the west. In the event that any intrusives are located on surface, a geochemical crew should be available for follow-up work.

D.H. Helgesen

David H. Helgesen

Vancouver, B.C.
January 31, 1967

MAP REF. NO.: N.T.S. 92-P-7
SC·2·66



Road

Road

N

24°

NOTE:
Values above lines indicate p.p.m. Cu. in soils.
" below " " " Mo. " "

500' 0 800' 1600' 2400' 3200' 4000' 4800' 5600' 6400' 7200'

SCALE: 1 INCH TO

COMPANY . . FALCONBRIDGE NICKEL MINES LTD.
PROPERTY . . BEAR GRID
LOCATION . . SOUTH CARIBOO

WORKING PLACE . .
TYPE OF MAP . . SKETCH
BASED ON . . PACE & COMPASS SURVEY

DATE . . 24 OCT 66
DRAWN BY . . DH HELGESEN
DATE OF WORK . . 10-31 MAY 66

SC-2-66

MAP REF. NO.: 92-P-16

SUN block

AKU block

WET block

N

24°

LEGEND

- Claim boundary
- 7 · Cu - p.p.m.
- ·12 Mo - p.p.m.
  - background
  - 3-8
  - 9-16
  - 17-32
  - 33-64
  - > 64
- Outcrop
- Swamp
- Creek

SCALE: 1 INCH TO 1000 FT (approximate)

FIG. SC-4-66

COMPANY . . FALCONBRIDGE NICKEL MINES LTD.
PROPERTY . . WET - SUN - AKU
LOCATION . . 92-P-16

WORKING PLACE . . SOUTH CARIBOO
TYPE OF MAP . . SKETCH - GEOCHEM.
BASED ON . . SOIL SAMPLING

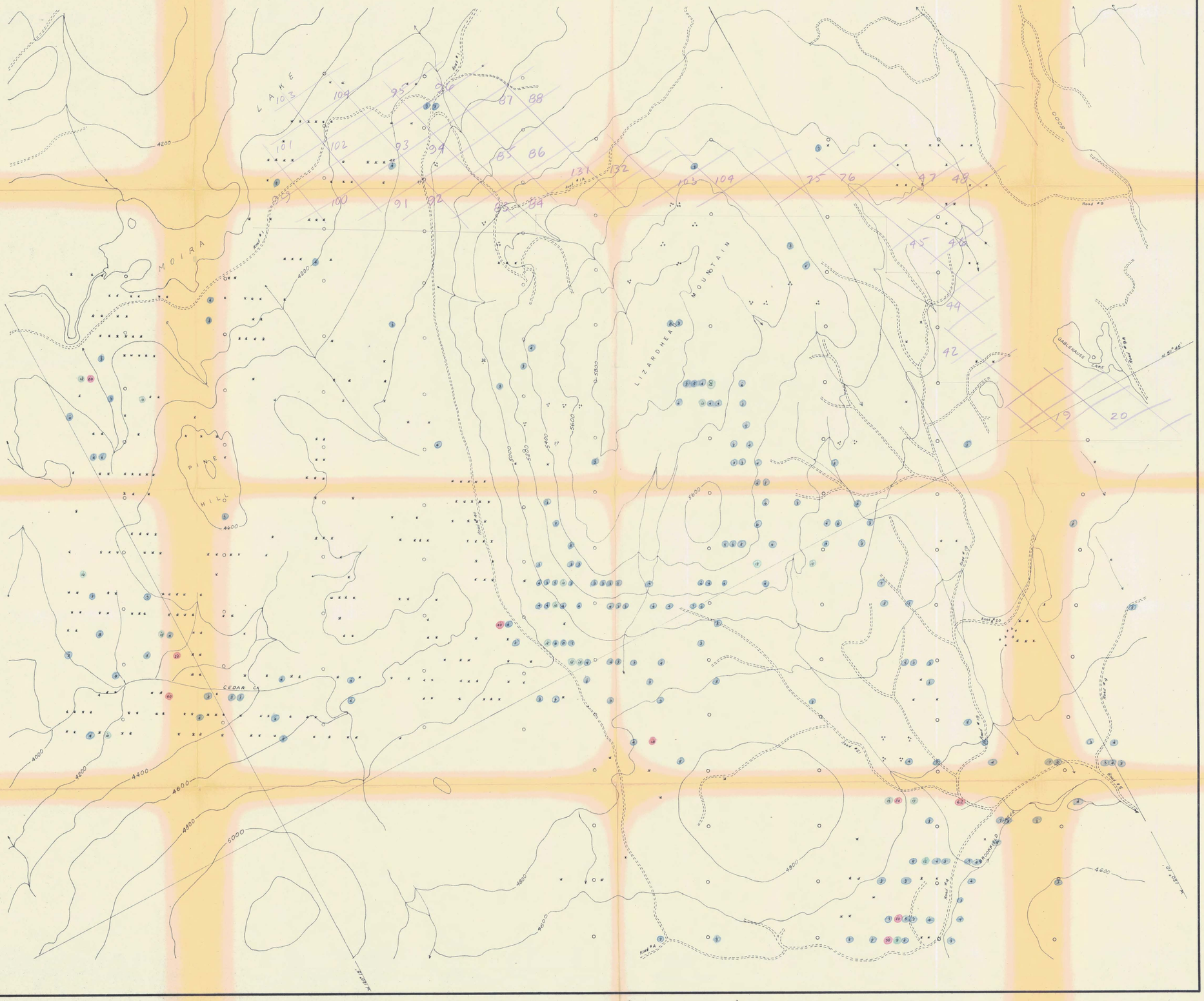
DATE . . 16/12/66
DRAWN BY . . [illegible]
DATE OF WORK . . 1966

MAP REF. NO.: 92-P

FIG. S.C.-3-66

LEGEND.

- Swamp
- Claim posts (approximate position)
- Outcrop
- No. above dot = Cu (p.p.m.)
- No. below dot = Mo (p.p.m.)



SCALE: 1 INCH TO 1000 FT.

FIG. S.C.-3-66

COMPANY .. FALCONBRIDGE NICKEL MINES LTD.
PROPERTY .. ICE & MUD CLAIMS
LOCATION .. SOUTH CARIBOO 92-P

WORKING PLACE .. CLEARWATER, B.C.
TYPE OF MAP .. GEOCHEMICAL PLAN
BASED ON .. SOIL SAMPLES

DATE .. 12/12/66
DRAWN BY .. A.S.L.
DATE OF WORK .. 1966

West Twin Lake

Montana Lake

241

-NOTE-

Values above lines indicate p.p.m. Cu in soils.
" below " " " Mo. - " .

500' 0 500' 1000' 1500' 2000' 2500' 3000' 3500' 4000' 4500'

SCALE: 1 INCH TO

COMPANY . . FALCONBRIDGE NICKEL MINES LTD.
PROPERTY . . TWIN GRID
LOCATION . . SOUTH CARIBOO

WORKING PLACE . .
TYPE OF MAP . . SKETCH
BASED ON . . PACE & COMPASS GRID

DATE . . 11 OCT 66
DRAWN BY . . D.H. HELGESEN
DATE OF WORK . . 15-25 MAY 66

MAP REF. NO.: N.T.S. 92-P-7
SC-1-66

SC-1-66

To be completed early 1966

Under Construction

MUD block

SUN block

AKU block

WEP block

ROE block

LEGEND

Roads

Contours

Creeks

Swamps

Lakes

Buildings

FALCONBRIDGE NICKEL MINES LIMITED

SOUTH CARIBOO

CLAIM PLAN 1966 Fig. 3

0 1 2 3 4

SCALE IN MILES

NOTE-
Contour interval = 200'

NOV. 1965.

MAP REF. NO.: NTS 92-P-1,2,7+8
SC-5-66

BONAPARTE LAKE

120° 40'
120° 30'
51° 20'
51° 15'
3832'

Brown Creek
Boss Creek
Bonaparte River
Akehurst Lake
Calve Hill
Hamer Lake
Joe Ross Creek
Clinton Mining Division
Kamloops Mining Division

LEGEND

GEOLOGY

TERTIARY

MIOCENE AND/OR PLIOCENE

4 — Plateau lava; olivine basalt, basalt andesite, related ash & breccia beds; basaltic granite; minor necks and plugs.

EOCENE

3 — SKULL HILL FORMATION: dacite, trachyte, basalt, andesite, rhyolite, related breccias.

JURASSIC

MIDDLE JURASSIC (?)

2 — Biotite granite, quartz diorite, hornblende granodiorite (phase of 1)

LOWER JURASSIC OR UPPER TRIASSIC

1 — Hornblende-biotite quartz diorite & granodiorite, minor hornblende diorite, monzonite, gabbro, hornblendite

NOTE: Geology taken from G.S.C. Map 3-1966, and revised as a result of field observations - June - September 1966.

GEOCHEMISTRY

Values on the right indicate in p.p.m the hot extractable copper content of stream sediments.

Values on the left indicate in p.p.m. the hot extractable molybdenum content of stream sediments.

COPPER

- 0-15 Regional Background
- 16-30 Local Background
- >30 Anomalous

MOLYBDENUM

- >2 Anomalous

0 1 Mi. 2 Mi. 3 Mi. 4 Mi.

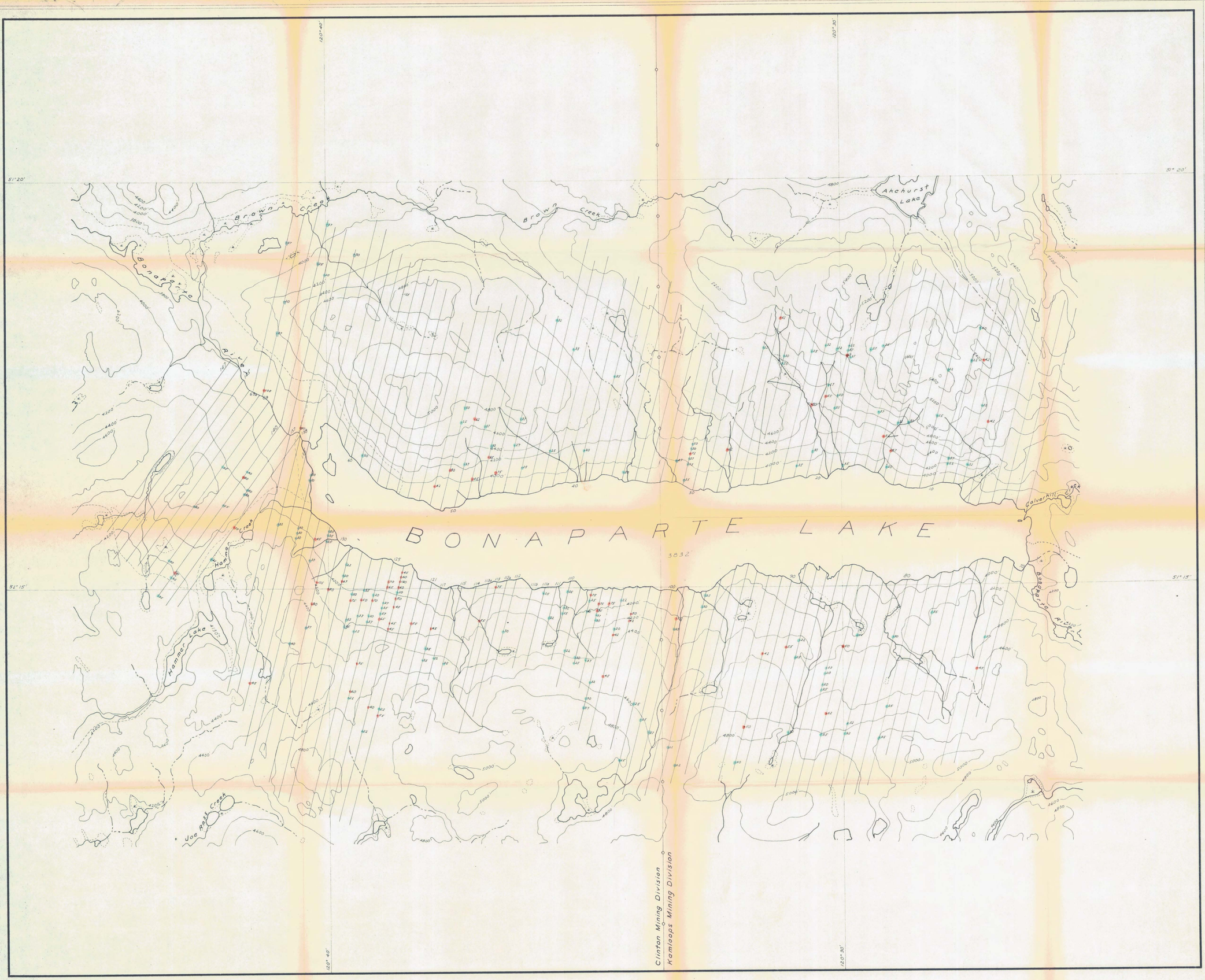
SCALE: 1 INCH TO

COMPANY . . FALCONBRIDGE NICKEL MINES LTD.
PROPERTY . .
LOCATION . . SOUTH CARIBOO

WORKING PLACE . . BONAPARTE LAKE AREA
TYPE OF MAP . . SEDIMENTS AND GEOLOGY
BASED ON . . B.C. DEPT OF LANDS PROVISIONAL 1:50,000 MAP ENLARGED TO 1:29,680.

DATE . . 9 DEC 66
DRAWN BY . . D.H. HELGESEN
DATE OF WORK . . JUNE - SEPT. 1966

MAP REF. NO.: N.T.S. 92-P-1,7+8



LEGEND

COPPER

- 0-20 Regional Background
- 21-40 Local Background
- >40 Anomalous

0 1Mi. 2Mi. 3Mi. 4Mi.

SCALE: 1 INCH TO

COMPANY . . FALCONBRIDGE NICKEL MINES LTD.

PROPERTY . .

LOCATION . . SOUTH CARIBOO

WORKING PLACE . . BONAPARTE LAKE AREA

TYPE OF MAP . .

BASED ON . . B.C. DEPT OF LANDS PROVISIONAL 1:50,000 MAP ENLARGED TO 1:29,680.

DATE . . 23 JAN 67

DRAWN BY . . D.H. HELGESEN

DATE OF WORK . . JUNE - SEPT. 1966.