

1042

GEOLOGICAL ASSESSMENT REPORT

KID, NANNY, GORDON, SAM, GERT, BILLY,
GOAT, WALTER, MILLER, RAM, GO, NICK and ABE

GROUPS

TUCHODI LAKES DISTRICT, B. C.

BY

GEO CAL LIMITED
WEST VANCOUVER, B.C.

GEOLOGICAL ENGINEER

C. B. SEIMSER, P. ENG.

September 14, 1966

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GEO CAL LIMITED
2658 Nelson Ave.,
West Vancouver, B.C.

September 14, 1966

Racing River Mines Ltd.,
915 Burrard Building
1030 West Georgia St.,
Vancouver 5, B.C.

Gentlemen:

At your request I have reviewed the reports and information on your claims staked or held in the Racing River Area, Northern B.C. Also, I have visited your property from July 6 to July 9, 1966, inclusive. While there I took samples and did any necessary field work.

The field work included one day with the use of a helicopter doing reconnaissance geological mapping. The rest of the field work included detailed mapping on the Kid Group and investigations at Goat, Sam and Nanny areas.

This investigation was completed by use of information gained from an Air Support E.M. survey, vertical photographs and colored oblique photographs.

Certified copies of all assay reports are submitted with this report. These were performed by Coast Eldridge Engineers and Chemists Ltd., of Vancouver.

Respectfully submitted

C. B. Selmsner
C. B. Selmsner

C. B. Selmsner, P. Eng.

SUMMARY

The original staking included the Gordon, Sam, Nick, Abe, Gert, Go, Miller and Walter Groups. These comprised a total of 300 claims. An additional 47 claims were staked to tie on the Sam Group and are called the Ram Group. Only one E.M. anomaly was discovered in regard to this staking. Other staking was carried out on the basis of other E.M. anomalies and favourable geological structures. These groups are called the Nanny, Kid, Goat, Paul, Moose and Billy Groups. These comprise in all a total of 142 claims.

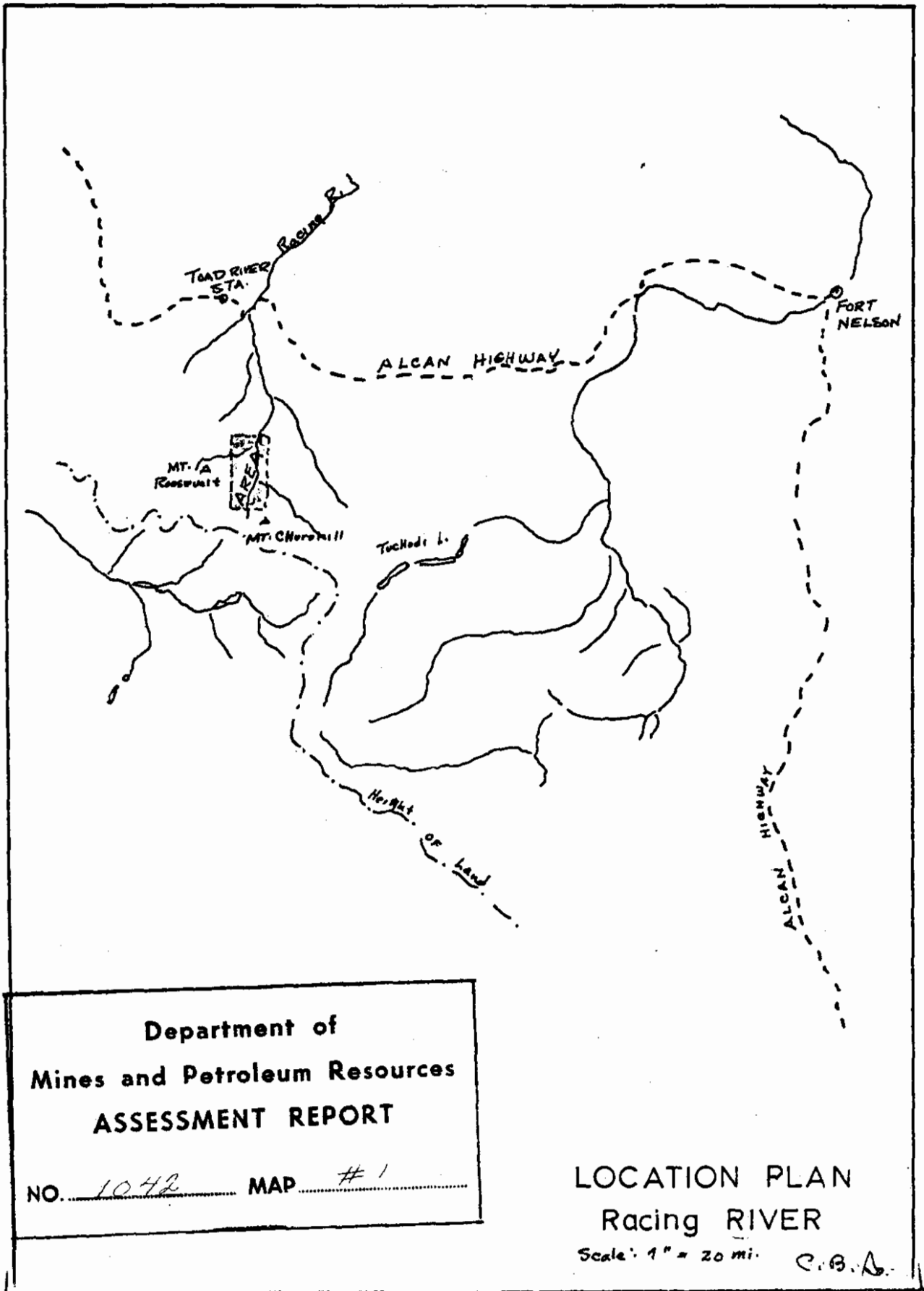
These claims, which have access from the Alcan Highway by way of the Racing Creek road, are located between $58^{\circ} 15'$ and $58^{\circ} 45'$ latitude; $125^{\circ} 00'$ and $125^{\circ} 15'$ longitude. Not all groups are accessible by road at present, but could be made so with some preliminary work.

At present, aside from the air support E.M. survey and geological reconnaissance, some preliminary exploration has been done on claims 3 and 4 of the Kid Group. This has consisted of drilling and blasting out the slide material on a Gossan location. Some sulphide mineralization occurs here as well as some of the other surveyed locations. The principal metal expected to be found is copper.

A budget of \$300,000. has been set to further explore the claim groups that have been recently staked. These will be assessed underground and at the surface with diamond drilling to find economic values that will be in sufficient quantity to warrant mining for copper ore.

LOCATION OF THE PROPERTY

The property under consideration consists of claims staked and recorded in the Liard Mining District and along Racing River. The claim groups are south of Mile Post 420, which is 120 miles west of Fort Nelson, British Columbia, at Latitude $58^{\circ}N$ and Longitude $124^{\circ}W$.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1042 MAP # 1

LOCATION PLAN
Racing RIVER

Scale: 1" = 20 mi. C.B.A.

GEOLOGYPhysiography:

The creek bottoms which on the Racing River reach an elevation of about 2000 feet near the Alcan Highway are filled with gravel and some slide material. These streams, which are aggrading, show braided drainage in some areas.

The mountain peaks, which attain a height of almost 8000 feet, are capped with glaciers. They are also dissected by cirques, which are divided by serrated ridges. Many of these cirques contain tarn lakes and piles of rock slide material.

The general terrain is alpine in aspect with many sheer walls on the mountain sides, which is typical of erosion on uplifted sedimentary rocks. On the face of many of these scarps are traced the bedding planes, which are flat, or nearly so, in some instances. In other instances, they show complicated folding in the shape of monoclines. The more competent rocks, such as the quartzites and dolomites, are broken up in blocky shapes by normal faulting.

Lithology:Summit Lake and Toad Areas

<u>Age</u>	<u>Formation Name</u>	<u>Description</u>
Middle Triassic	Liard	Crystalized limestone Limestone and shale Sandstone and Shale
	<u>Unconformity</u>	
Cretaceous	Garbett	Ferrous and siliceous shale Soft black shale with clay nodules.
Mississippian	Kindle	Sandstone and shale

<u>Age</u>	<u>Formation Name</u>	<u>Description</u>
Upper Devonian	Ramparts	Dark fine-grained limestone interbedded chert Contains stromatoperoids, brachiopods and corals
	Fort Creek	Black shale weathered with yellow stain
Lower Devonian	Muncho	Quartzitic sandstone with quartzite
	McConnel Cr.	
Silurian	Ronning	Dark grey siliceous dolomite with some black shale. Contains stromatoperoids
Cambrian or Precambrian		Quartzite

The Precambrian quartzite provides a durable platform on which the softer dissected sandstones and shales exist as outliers. The rampart limestones stand out on the higher peaks as characteristic scarps of a dull grey color. The younger series such as the Garbett are found at the higher elevations in the southern part of this area.

Mineralization:

The mineralization is controlled by the presence of the more resistant diabase dikes and sequential or preliminary faulting. Most of these areas are capped by a gossan composed mostly of iron carbonates. The dikes are schistose and contorted at these locations and greatly altered with pyrite replacement. The other sulphide minerals present are usually bornite and calcopyrite. A characteristic bloom may accompany the alteration and is white or saffron in color.

Structural Geology:

At least three regional faults extend through the area in northwest to southeast direction. These faults are nearly vertical in attitude. These are transcurrent faults of regional nature and are adjustments to the more competent rocks which have been upthrust and folded into the Rocky Mountain ranges.

There is subsidiary faulting of a more local nature which is north-south, or nearly so, in direction. These are nearly vertical in attitude.

Thrust faults are also present in the area with large movements. They have a lower attitude than the other faulting.

In the less competent rocks folding has taken place forming prominent monoclinal structures. Synclinal and anticlinal folding is present in the northern part of the area.

The contact between the older precambrian quartzites and the younger paleozoic sandstones, shales and limestones can be followed for many miles through the area. It is most prominently displayed along the Racing and Delano Creeks.

Property Geology:1. BILLY GROUP

The Billy Group is traversed by a transcurrent fault and is on the east limb of a synclinal fold. Quartzite sediments dip from 14° West to 31° East. One E.M. Anomaly was located here.

2. GANG GROUP

The Gang Group lies near a transcurrent fault.

3. KID GROUP

The Kid Group is traversed by a transcurrent fault and is on the contact between old quartzites and younger paleozoic rocks.

There is subsidiary shearing, much alteration and a basic dike extending northeast to southwest with a dip of 15 degrees toward the northwest. Mineralization consists of massive pyrite and disseminated calcopyrite and bornite. The stratigraphy below the mineralized location is obscure because of vegetation and talus material, but consists of tightly folded limestones and sandstones abutting on a vertical fault. The gossan is well exposed in the stream running down the mountainside. An E.M. anomaly was located here.

4. GOAT GROUP

The Goat Group contains subsidiary faulting with diabase dikes. It is situated on the west limb of an anticlinal structure. The two E.M. anomalies located here are also on strike with the Lemjay showings, which contain economic deposits of copper ore. These are in a monoclinal fold in quartzite sediments.

5. MOOSE GROUP

The Moose Group which is part of the Goat and Paul Groups has an E.M. Anomaly. There are limestone sediments overlying a disconformity with underlying quartzites.

6. PAUL GROUP

The Paul Group contains slightly folded quartzite sediments with a gossan clearly shown; this coincides with an E.M. anomaly.

7. NANNY GROUP

The Nanny Group has two E.M. anomalies in a diabase dike. The sedimentary series consists of quartzites dipping 30 degrees southwest. There is also a steep dipping fault with limestone sediments overthrust toward the west. A gossan is prominently displayed in this group.

8. GORDON GROUP

The Gordon Group is traversed by a transverse fault and two subsidiary shear zones.

9. SAM GROUP

The Sam Group is traversed by a transverse fault and a subsidiary shear zone. The sedimentary rocks consist of flat lying shales with a gossan at the site of an E.M. anomaly.

10. The site of the Churchill Mine, which produced an E.M. anomaly has shales dipping 29° toward the east.

11. GO GROUP

The Go Group is underlain by 38 degree west dipping sandstones with some diabase dikes present. There is also some overthrust folded structures in dolomite and quartzite.

12. MILLER GROUP

The Miller Group is underlain by sandstones dipping 44 degrees toward the west. Some diabase dikes are also present.

Mineralization:

The copper mineralization occurs in competent rocks that have been sheared and impregnated by diabase dikes. These basic green dikes are intimately related with quartz carbonate vein structures. These consist for the most part of fissure veins which contain calcopyrite. Float of this type was picked up on the Nanny Group which assayed 5% copper. Massive calcocite-bornite float picked up on the Kid Group assayed 57.47% copper.

RECOMMENDATIONS

The Kid Group which is most accessible should be diamond drilled first. While this is being done the Nanny Group can be prospected for mineralization in shattered quartzites subsequent to diamond drilling. The other groups may then in turn be further prospected and drilled.

The proposed budget for this work would be:

Stage 1

Kid Group

Diamond Drilling 4,000 feet at \$12.50 per foot	50,000.00
Access Roads	20,000.00
Transportation during operation	5,000.00
Food and Lodging allowance (7.00 per day)	7,000.00
Assaying Au. Ag Cu.	<u>2,000.00</u>
	\$ 84,000.00

Stage II

Nanny Group

Dia Diamond Drilling - 4,000 feet at \$12.50 per foot	50,000.00
Access Road	19,000.00
Transportation during operation	5,000.00
Food and Lodging (\$7.00 per day)	7,000.00
Assaying Au. Ag Cu.	<u>2,000.00</u>
	\$ 83,000.00

TOTAL EXPENSES

\$ 167,000.00

REFERENCES

Williams, M. Y. (1944) "Geology Along the Alaska Highway, Fort Nelson to Watson Lake", G.S.C. pages 44 - 28

North and Henderson (1954) "Summary of the Geology of the Southern Rocky Mountains of Canada" Guide Book, 4th Annual Field Conference, Alberta Society of Petroleum Geologists.

Landon, L.R., and Chronic, B.J. (1947) "Mississippian Rocks Along the Alaska Highway" American Society of Petroleum Geologists. Bull. Vol. 31 #9 p 1608

CERTIFICATE OF QUALIFICATIONS

The formal education of the author consists of undergraduate studies at Union College, Schenectady, New York, in engineering and science, with a degree conferred as B. Sc. Graduate study was taken at McGill University and at the University of Toronto in mining geology and geophysics with a degree conferred as M. Sc. He is qualified both in engineering geology and geophysics as a professional engineer.

The author has had some twenty years' experience in the fields of geology and geophysics doing exploration work throughout Canada. He has also worked for a short period of time in the Transvaal region of South Africa.

The author has been a member of the Association of Professional Engineers of Ontario, Alberta and British Columbia for the past 14 years. He is at present an active member of the Association of Professional Engineers of British Columbia with certificate number 4683.

His knowledge of the property outlined in this report has been gained from the ^{field examination} ~~geophysical survey~~ and Reference has also been made to government reports and pertinent texts.

The author has no financial interest in this property other than the survey work, and is acting wholly as a consultant to the interested principal. Any remuneration received has been for expenses incurred during the survey and for his professional services.

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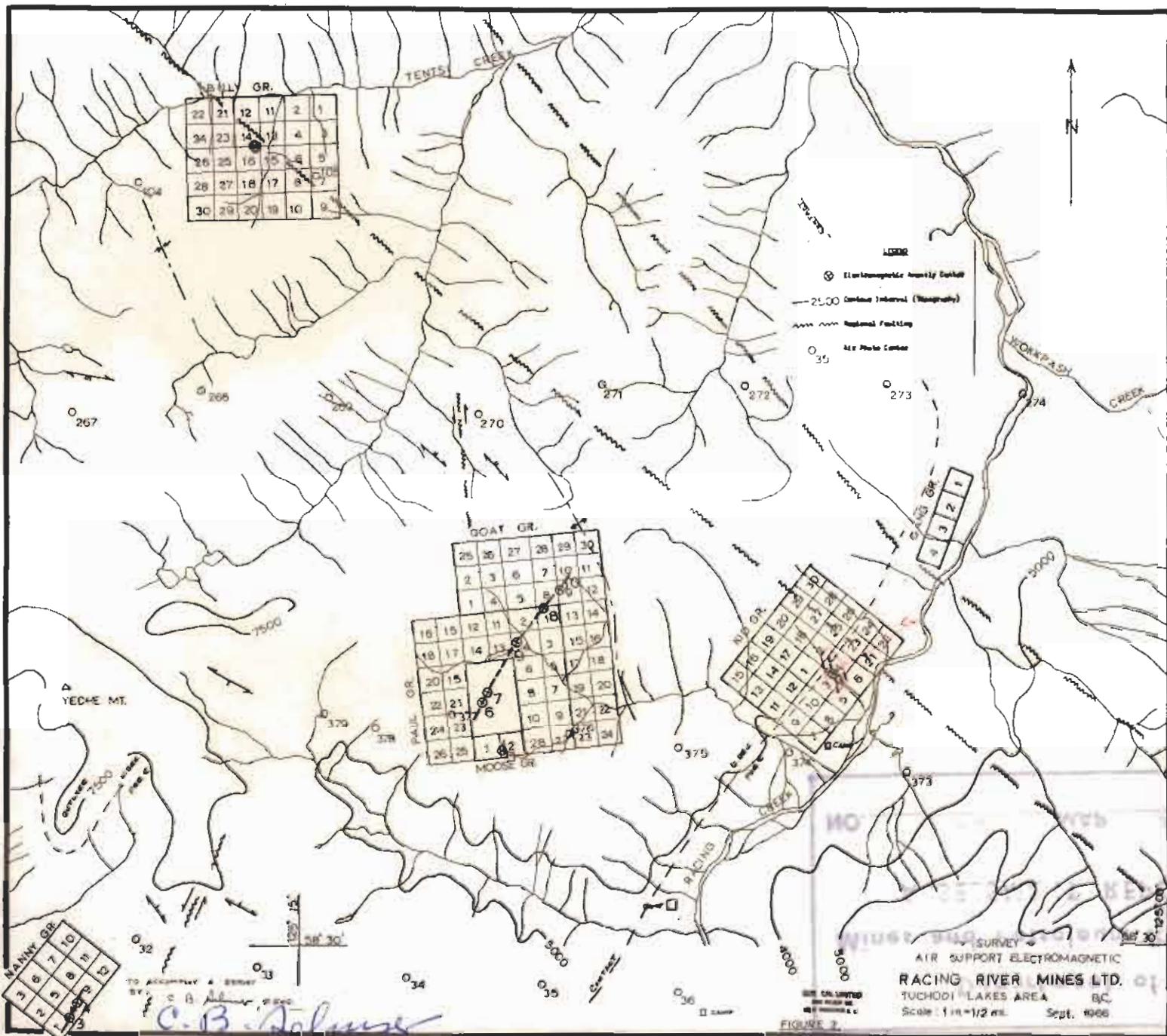


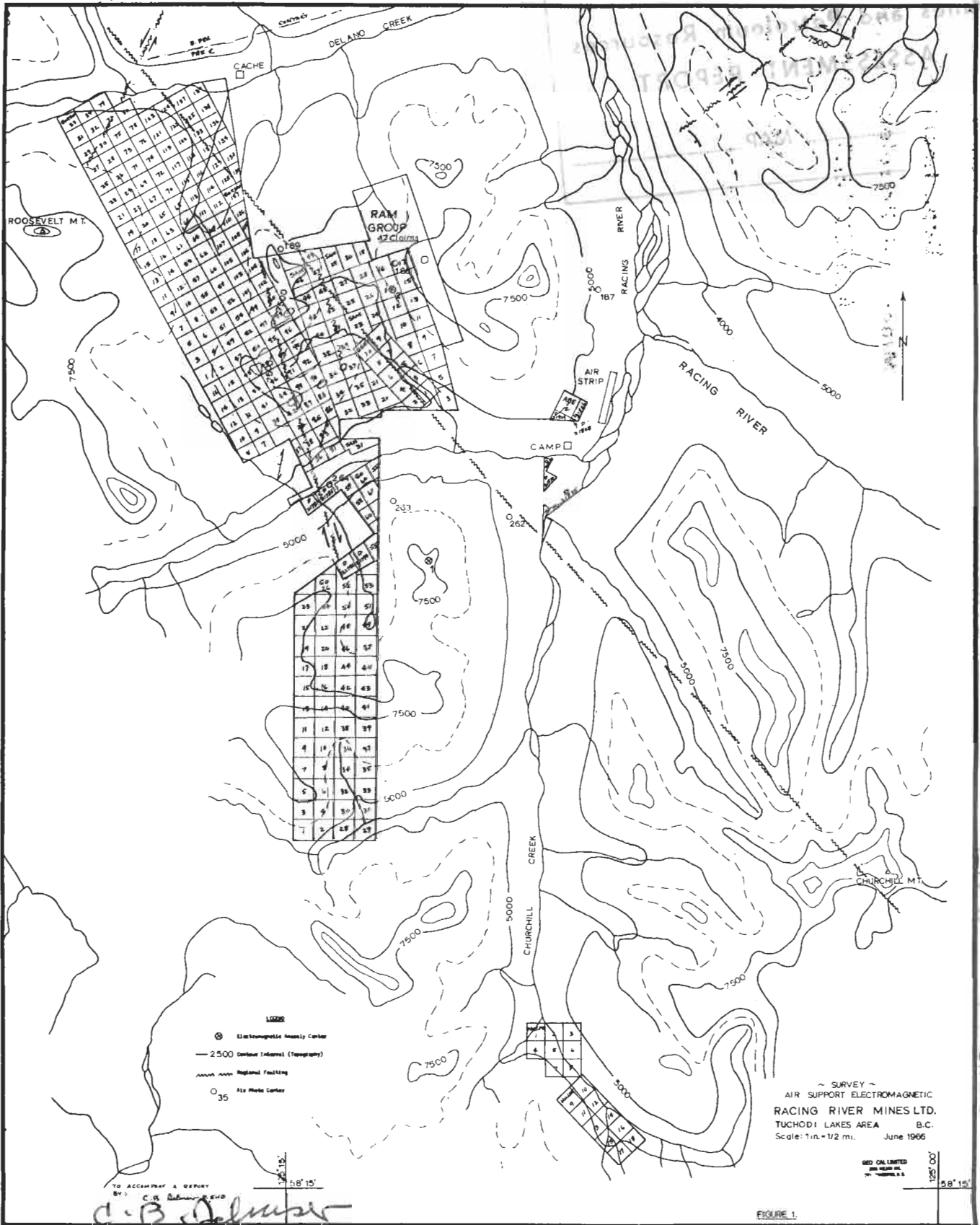
FIGURE 2

AIR SUPPORT ELECTROMAGNETIC
 RACING RIVER MINES LTD.
 TUCHODI LAKES AREA BC.
 Scale: 1 in = 1/2 mi. Sept. 1966

MANNY GR.

3	6	7	10
2	5	8	11
1	4	9	12

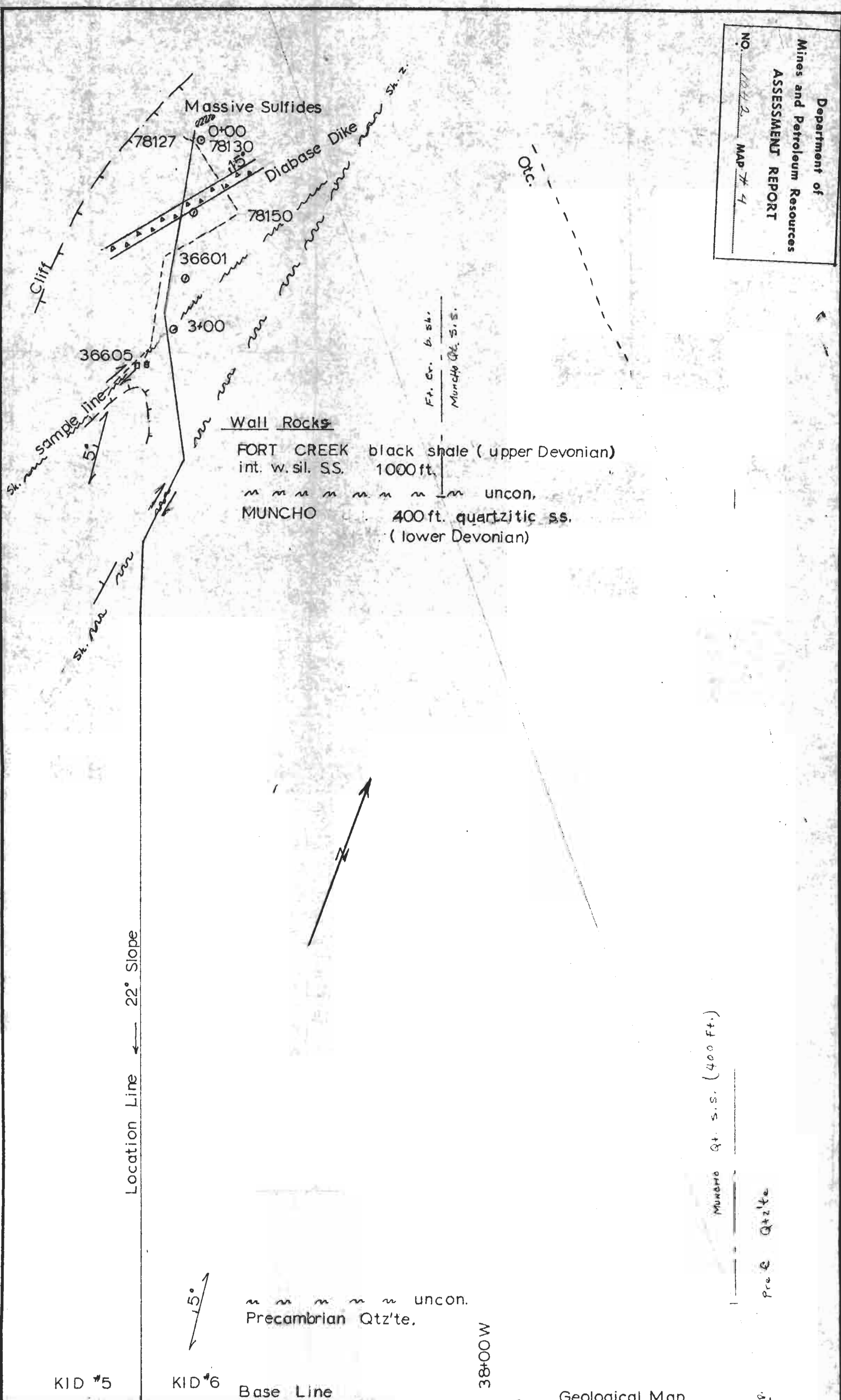
TO ACCOMPANY A REPORT
 BY C. B. Adams
C.B. Adams



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 By: *C.B. Delaney*
C.B. Delaney

FIGURE 1.

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Wall Rocks
 FORT CREEK black shale (upper Devonian)
 int. w. sil. SS. 1000 ft.
 ~ ~ ~ ~ ~ uncon.
 MUNCHO 400 ft. quartzitic ss.
 (lower Devonian)

Ft. Cr. b. sh.
 Muncho Qt. S.S.

Location Line ← 22° Slope

15°
 ~ ~ ~ ~ ~ uncon.
 Precambrian Qtz'te.

KID #5 KID #6 Base Line

38+00 W

Muncho Qt. S.S. (400 Ft.)

Pre C Qtz'te

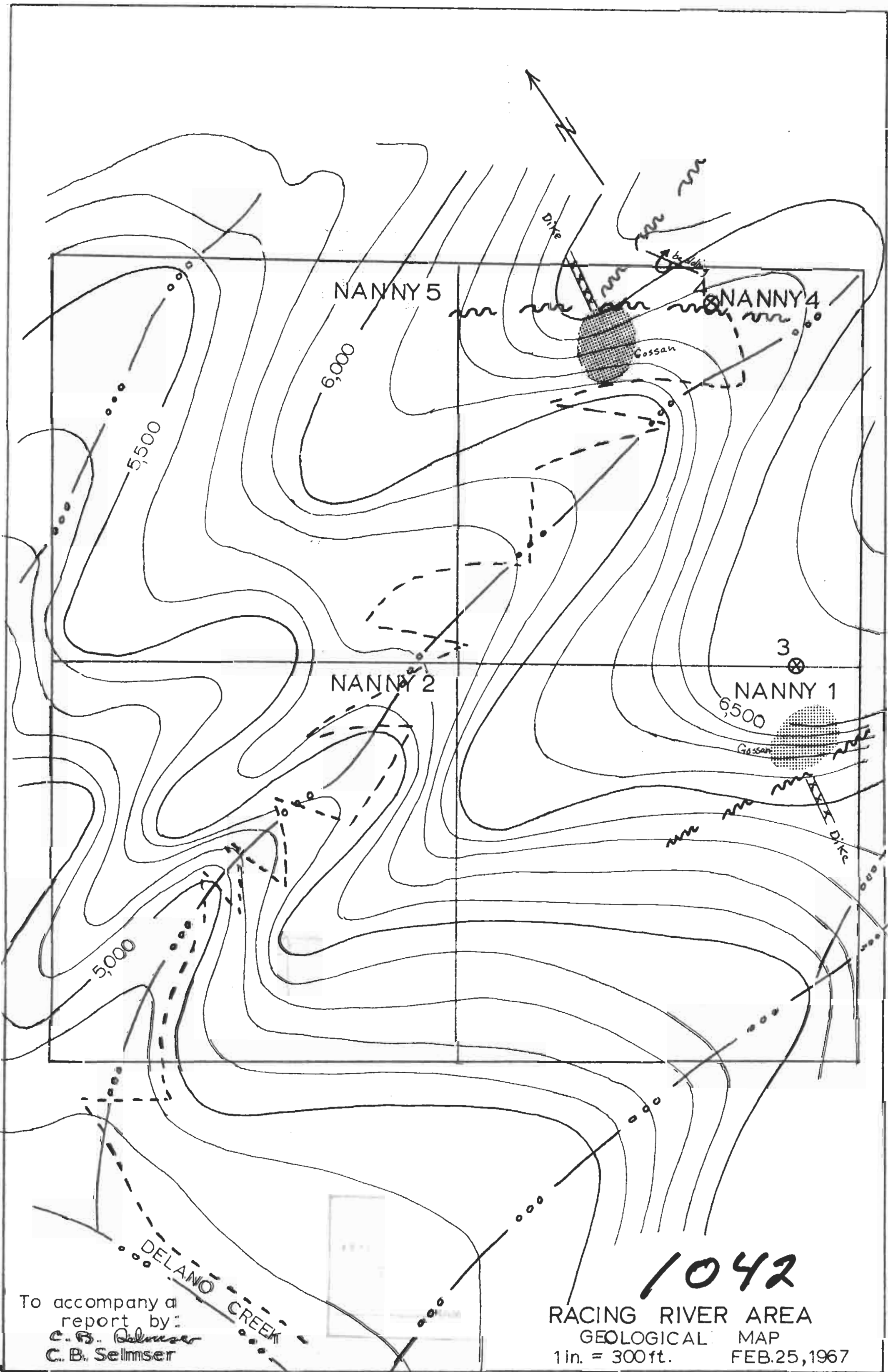
Geological Map

KID GROUP
 RACING RIVER MINES LTD.
 Tuchodi Lakes B.C.
 Scale: 1 in. 100 ft. Sept. 1966

TO ACCOMPANY A REPORT BY:
 C. B. Palmer, P. Eng.

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FIGURE 3



To accompany a
 report by:
C. B. Selmsler
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RACING RIVER AREA
 GEOLOGICAL MAP
 1 in. = 300 ft. FEB. 25, 1967