

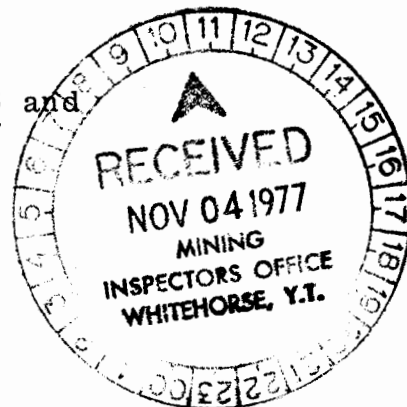
1977 Geological Assessment Report



TITLE Fyre Lake Property
CLAIMS Fyre #1-40 Inclusive
COMMODITY Cu-Zn
LOCATION Two miles east of Fyre Lake, Yukon
Latitude 61°14'N Longitude 130°31'W
Watson Lake Mining District 105 G 2

By A.C. Hitchins, MSc.
For AMAX Potash Limited

Work Period August 26 - 27, 1976 and
July 3 - 10, 1977



AMAX VANCOUVER OFFICE

090245

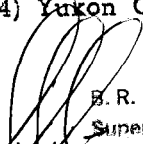
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$3600.00



~~Resident Geologist or
Resident Mining Engineer~~

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.


B. R. BAXTER

Supervising Mining Recorder

 Commissioner of Yukon Territory



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SUMMARY

The Fyre Lake Property comprises 40 claims located near Fyre Lake in the Simpson Mountains, Yukon Territory. Claims were staked in June 1976 to cover known copper-zinc sulphides in pre-Mississippian chloritic and micaceous schists.

Chalcopyrite and sphalerite are disseminated in a thin band of magnetite-silica iron formation in basic chlorite schist immediately below the contact with overlying micaceous schists. The iron formation is exposed in several outcrops over a strike length of 2,500 feet but copper-zinc mineralization is low grade and sporadic.

DISCUSSION AND RECOMMENDATIONS

The sulphide and magnetite iron formation are thought to be stratiform lenses precipitated during the waning stages of basic volcanism but before the deposition of aluminous sediments. Copper and zinc sulphides are concentrated in the oxide facies of the iron formations and overlain by laterally restricted, barren, massive to bedded pyrite.

Controls for limiting the mineralization to a portion of the chlorite schist-grey mica schist boundary are not known at present but should be investigated through property examinations and mapping other chlorite schist members in the Simpson Range.

No further work is recommended on the property.

INTRODUCTION

The Fyre Lake Property is located two miles east of Fyre Lake in the Simpson Range of the Pelly Mountains, Yukon Territory (Figure 1). The property comprises a 40 claim block covering the ridges and floor of a southwest facing cirque. Relief within the claim block is 1,700 feet with the ridges reaching 6,200 feet. Except for alpine fir in the cirque valley, the property is above treeline. Small patches of snow and ice remained in north facing gullies during the summers of 1976 and 1977.

Access is best afforded by fixed-wing aircraft from Ross River or Watson Lake to Fyre Lake, thence by helicopter to the property. The gravel surfaced Campbell Highway passes approximately 25 miles northeast of the claim group.

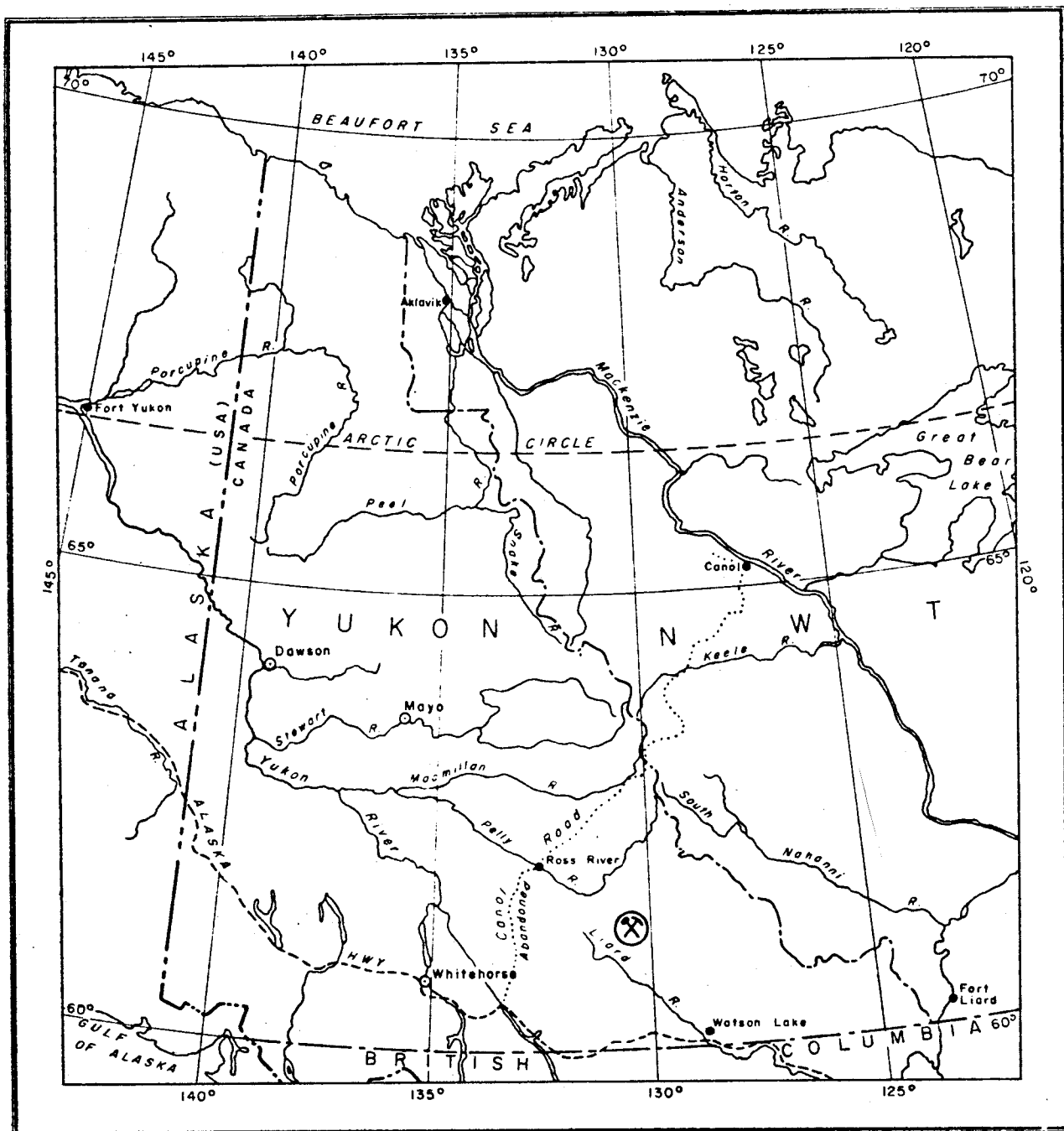
The Fyre #1-40 claims (Figure 2) were staked on June 19, 1976 to cover known copper-zinc sulphides in an oxide iron formation enclosed by quartz-chlorite mica schists.

A two-man field party completed mapping and prospecting the property in July, 1977. Field results were plotted on an airphoto enlargement at 1 inch to 1,000 feet (Figure 3). Rock exposure is excellent along ridges but is obscured by drift on the cirque floor.

CLAIM DATA

<u>Claim Name</u>	<u>Grant Number</u>	<u>Anniversary Date</u>
Fyre #1-40 Incl.	YA066-YA105 Incl.	July 12, 1977

Watson Lake Mining District



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FYRE LAKE PROPERTY
WATSON LAKE MINING DISTRICT — YUKON TERRITORY

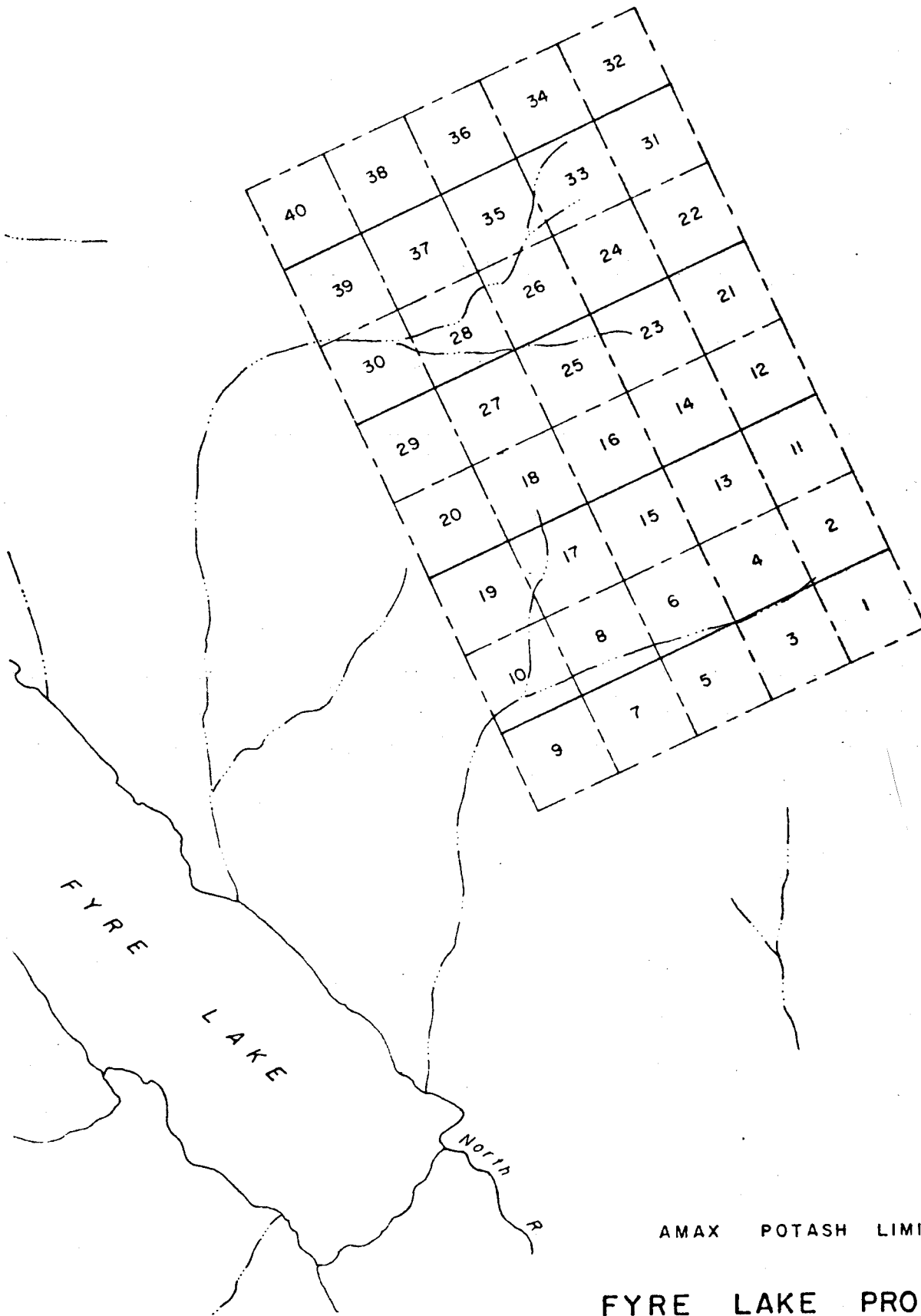
LOCATION MAP

SCALE 1" = 120 MILES

N.T.S. Ref. 105 G 2
FIG. 1

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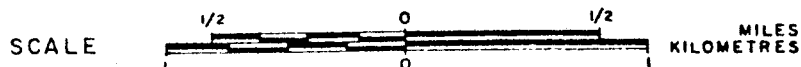
H.P.



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FYRE LAKE PROPERTY
WATSON LAKE MINING DISTRICT — YUKON TERRITORY

CLAIM MAP
— FYRE CLAIMS —



N. T. S. Ref. 105 G 2

FIG. 2

Enough assessment was performed to hold the following 36 claims for one year. Four claims were dropped.

Fyre # 1-8	YA066-073
11-18	YA076-083
21-40	YA086-105

PREVIOUS WORK

Cassiar Asbestos Corp. conducted magnetometer and E.M. surveys, drilled 23 packsack holes (735 feet) and 12 AX holes (1,909 feet) in 1961. In 1966 Atlas restaked the area and flew an airborne magnetometer/E.M. survey, completed ground magnetometer, E.M., and geochemical surveys and drilled six holes (1,934 feet)*.

REGIONAL GEOLOGY

The property lies eight miles northeast of the Tintina Fault in an area underlain by gently to moderately dipping micaceous to chloritic schists and gneisses of undetermined age. Estimated ages of these metamorphic rocks range from Hadrynian to Devono-Mississippian. Several plutons of serpentized ultramafic rocks and quartz monzonite are preserved as thrust klippen lying on the metamorphic terrain (Templeman-Kluit G.S.C. Paper 77-1A). Mylonites and augen gneisses often define margins of the thrust sheets.

Several other nearby base metal showings (Hoo, North Lake, and Wolverine) occur in slates, schists and greenstones similar to the Fyre host rocks.

* Archer-Cathro Mineral Inventory

PROPERTY GEOLOGY AND MINERALIZATION

The property geology at a scale of 1"=1000' and a stratigraphic column are depicted in Figures 3 and 3a respectively.

The property encompasses a generally gently dipping sequence of chloritic schists and grey mica-quartz schists, with quartzite and felsic tuff bands, intruded by Mesozoic quartz-monzonite stocks. The main lithologic units exposed are discussed below: .

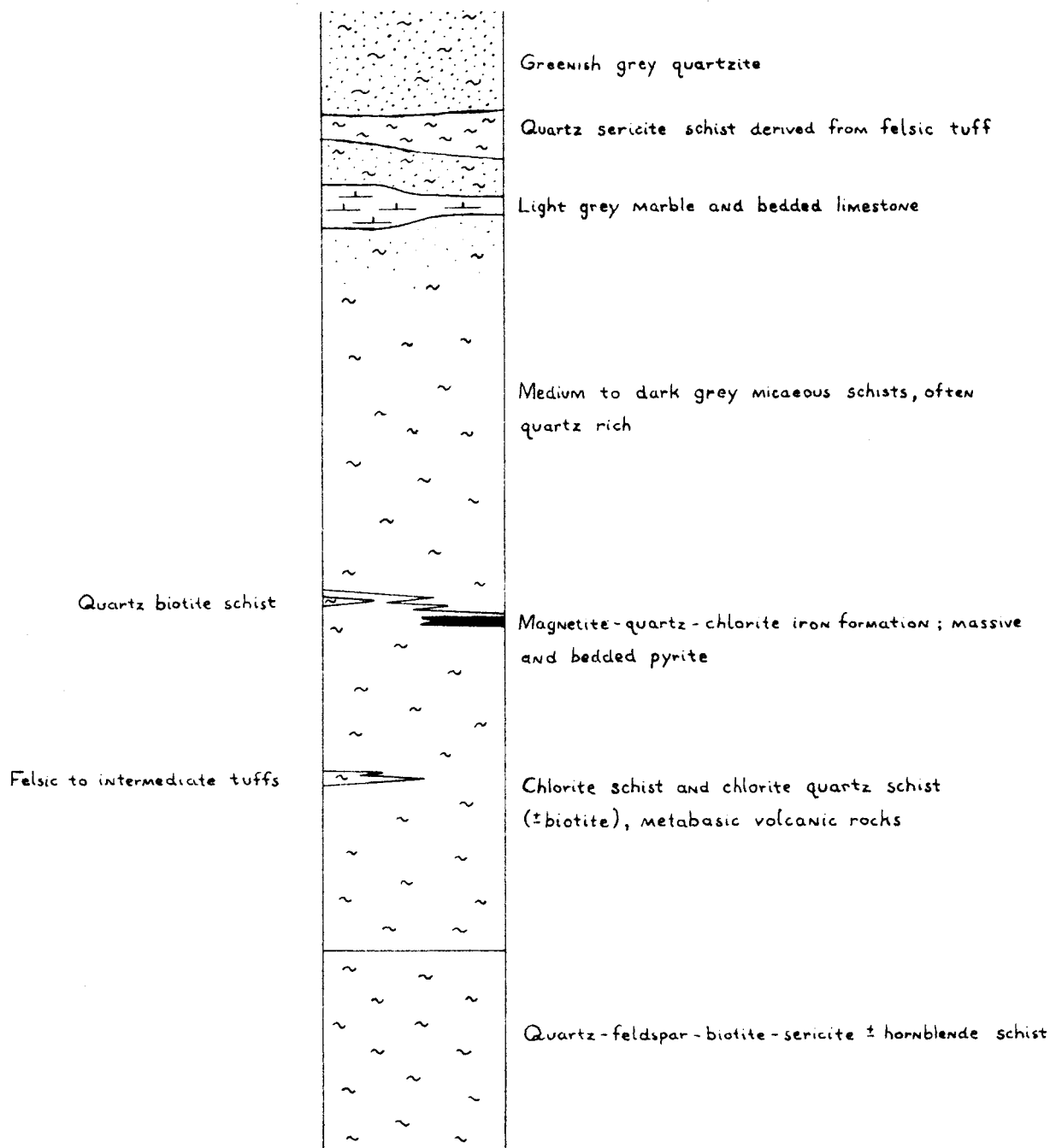
UNIT 1 Part of the ridge south of the property appears to be a thrust sheet of augen gneiss grading into a cherty banded mylonite towards the sole of the thrust. The augen gneiss consists of pink feldspar metacrysts in a fine grained green to pink matrix.

Source and age relations of this unit are difficult to surmise but the rocks do not appear to be higher grade metamorphic equivalent of a unit exposed on the claim group and are therefore assumed to be part of an allochthonous block.

UNIT 2 Quartz-feldspar-biotite schist and gneiss exposed in the creek bottom and on the northwest corner of the claim group comprise the lowest stratigraphic unit. This unit is probably conformably overlain by the chlorite schist.

UNIT 3 Chlorite schist and chlorite-quartz schist, derived from basic tuffs and flows, is the predominant rock type on Claims #33-38. The well foliated dark green schist often has a kneaded, tightly folded texture with shiny foliation planes indicating movement parallel to foliation. Ubiquitous clear to white quartz lenses and bands occasionally contain trace pyrite and chalcopyrite. Contact with the overlying grey schist is gradational both laterally and horizontally.

LITHOLOG



AMAX POTASH LIMITED

FYRE LAKE PROPERTY
— FYRE CLAIMS —

WATSON LAKE MINING DISTRICT — YUKON TERRITORY

STRATIGRAPHIC COLUMN

NOT TO SCALE

Vancouver —

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N. T. S. Ref 105 G 1, 2

FIG. 3a

Cliffs of compositionally banded quartz-chlorite schist and gneiss (3a) exposed beneath the thrust sheet of augen gneiss may be metamorphic equivalents of the dark green chlorite schist.

Small pods and bands of meta felsic to intermediate tuffs (3b) indicate a minor felsic component in the dominantly basic volcanic sequence.

Biotite flakes and bands are common but rarely form mappable quartz-biotite schist sub units (3c).

UNIT 4 Magnetite-silica-chlorite iron formation and massive to bedded pyrite (4a) are exposed in creek beds and trenches on Claims #25 and #28. In the northern showing on Claim #28 a 12-foot thick section of flat lying dark green siliceous magnetite-chlorite iron formation is enclosed in a non-magnetic chlorite-quartz schist. Within the iron formation lenses and bands of silica-magnetite are generally separated by chlorite bands. Disseminated chalcopyrite and sphalerite are restricted to the iron formation.

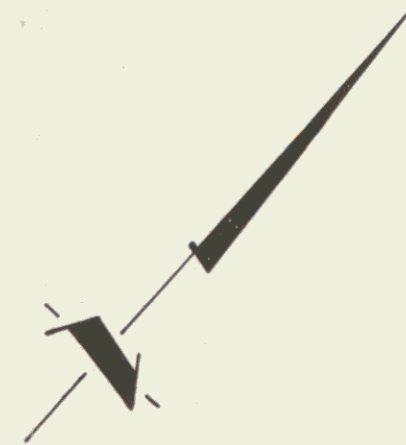
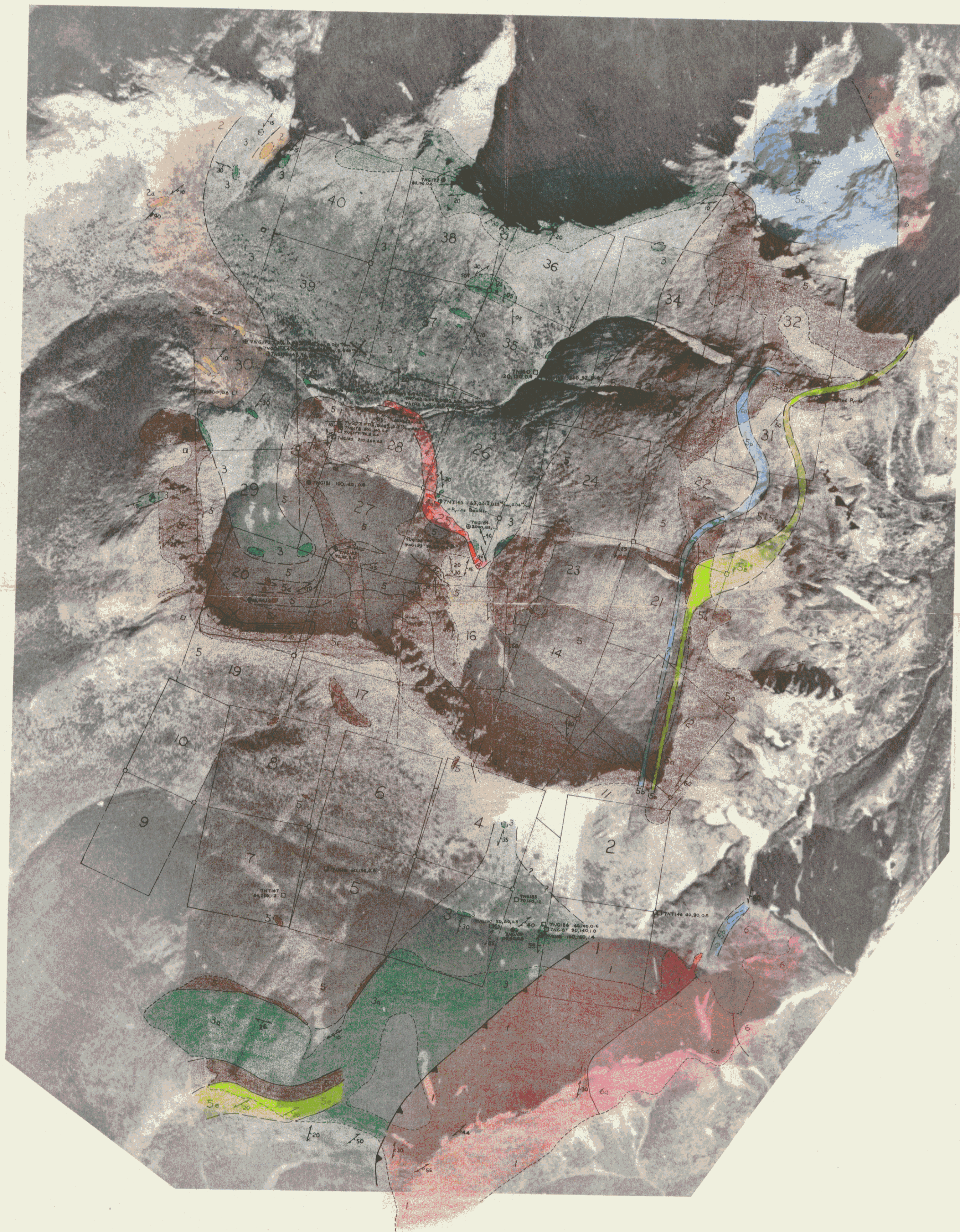
The main showing is exposed in two stream beds on Claim #25. Massive and bedded pyrite approximately ten feet thick, occurs in a chlorite schist. The oxide iron formation is not visible in the creeks but in outcrops to the south, small pods of oxide iron formation with disseminated pyrite are exposed. Minor shearing and folding has elevated the hillside showings 20-30 feet above the creek bottom exposures.

Previous drilling suggests that the sulphide iron formation overlies the oxide iron formation and is a laterally restricted facies of the iron-rich sequence. Selected float samples of oxide-sulphide iron formation assayed up to 1.6% Cu.

UNIT 5 Medium to dark purplish grey fine grained, lustrous and well foliated micaceous schists and micaceous quartzites are the most common rock type. Towards ridge crests the schists become quartzitic (5a) with occasional white to light grey marble units (5b). A tan to rusty weathering quartz-sericite schist exposed between the marble and the quartzites suggests a small episode of felsic volcanism (5c). South of the main showing the contact between the grey schist and the underlying chlorite schist is gradational.

UNIT 6 Mesozoic medium to coarse grained granodiorite and coarse grained greenish syenodiorite (6a) crop out on ridges east and south of the claim group and may be part of the allochthonous block discussed under Unit 1.


A.C. Hitchens, MSc.



LEGEND

JURASSIC AND/OR CRETACEOUS

- 6 Medium to coarse grained granodiorite and granite. 6a Coarse grained greenish syenite and diorite, contains dykes of 6.

DEVONIAN ? - HADRYNIAN ?

- 5 Medium to dark grey micaceous schist, often quartz rich. 5a Greenish grey quartzite. 5b Light grey marble and bedded limestone. 5c Chloritic limestone. 5d Biotite quartz schist. 5e Quartz sericite schist derived from felsic tuff. 5f Similar to 5 but chlorite > biotite.
- 4 Magnetite-quartz-chlorite iron formation. 4a Massive and bedded pyrite.
- 3 Chlorite schist and chlorite-quartz schist ($\pm$ biotite); metabasic volcanic rocks. 3a Gneissic chlorite-quartz schist. 3b Felsic to intermediate tuff. 3c Quartz-biotite schist.
- 2 Quartz-feldspar-biotite-sericite $\pm$ hornblende schist. 2a Quartz-feldspar-biotite gneiss.
- 1 Augen gneiss, mylonite.

SYMBOLS

- Outcrop boundary.
- ▲ Thrust fault.
- /// Geological contact (defined, approximate, assumed).
- Lineation.
- ↗ Foliation attitude.
- ↘ Schistosity.
- ↖ Jointing attitude.
- ✓ X Bedding attitude (inclined, horizontal).
- 7NT146 40, 90, 0.8 Silt sample site; sample number; p.p.m. Cu, Zn, Ag.
- 7NG189 10, 40, 0.8 Rock chip sample site; sample number; p.p.m. Cu, Zn, Ag or % Cu, Zn and oz./ton Ag, Au.
- Claim post, claim location line.
- Claim boundary.

Anthony Williams 03/21/1977

AMAX POTASH LIMITED

FYRE LAKE PROPERTY
FYRE CLAIMS

WATSON LAKE MINING DISTRICT — YUKON TERRITORY

GEOLOGICAL MAP

SCALE 1:12,000
1000 0 1000
300 0 300
FEET
METRES

To accompany assessment report by: A. C. Hitchins.

Vancouver —

J.G.L., H.P.

N. T. S. Ref. 105 G 2

FIG. 3

NOTE — Base map is an enlargement of portion of airphoto A 12189-237