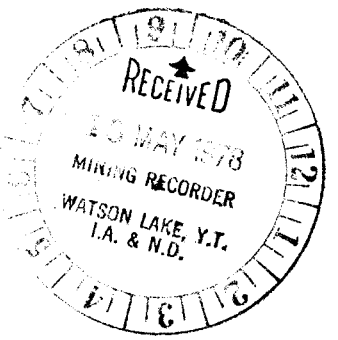
COMBINED GEOLOGICAL & GEOCHEMICAL REPORT

RAM CLAIM GROUP

61°41'N 132°38'W

WATSON LAKE MINING DIVISION

NTS 105F/10

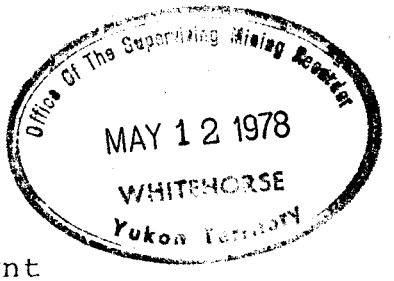


By

J. Wilson

C.J. Westerman

Utah Mines Ltd. Exploration Department



Work Performed July, August 1977

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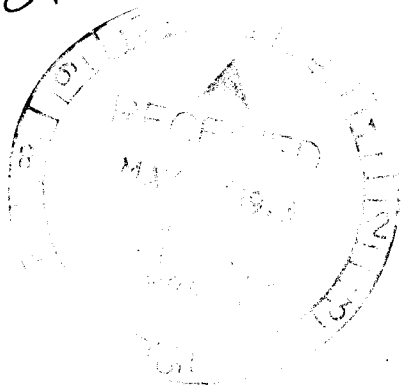
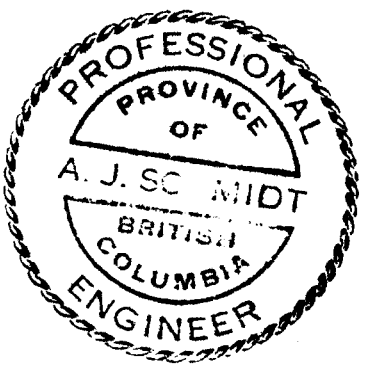




This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$5000.00

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (1) Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

For Commissioner of Yukon Territory

CONTENTS

		Page
Summary		1
Introduction		3
Claims		3
Work Program 1977		6
Geological Survey -	Regional Geology	7
	Local Geology	7
	Structure	13
	Mineralization	14
Geochemical Survey		16
Conclusions & Recommendations		18
References		19
~~Statement of Costs~~		~~20~~
~~Statement of Qualifications~~		~~21~~

FIGURES

Location Map	4
Claim Map	5
Geology Map - simplified	8
Schematic Facies Relationships	10

TABLES

Rock chip geochemical results	15

MAPS

Geology	back pocket
Geochemistry	back pocket

SUMMARY

The RAM 1-48 claim group is located in alpine terrain in the Pelly Mountains, Yukon Territory approximately 35 kilometers south of Ross River in the Watson Lake Mining Division. The 1977 work program consisted of prospecting, geological mapping and reconnaissance geochemical soil and silt sampling.

The claims are underlain by Devonian and Mississippian carbonates, shales and intermediate to acid volcanic rocks displaying rapid lateral and vertical facies changes. The southern and western parts of the claims are underlain by a lower package of carbonates and shales which have been locally subjected to silicification and metamorphic modification due to the intrusion of a syenitic stock which outcrops to the west of the claim block.

To the east and north, the carbonate horizon gives way rapidly to a thick sequence of dacitic volcanic flows. A thick sequence of siltstones and shales overlying the carbonates in the west thins rapidly to the northeast. The upper stratigraphic package which outcrops in the east contains significant thicknesses of rhyolitic flows, tuffs and local rhyolitic flow breccias.

In the west, minor chalcopyrite occurs in small pyrrhotite pods in the carbonates, close to the lower black shale interface. Hydrozincite is also present in the shales close to this interface and is associated with small quartz-carbonate-pyrite breccia zones. Geochemical soil and silt sample anomalies in this area reflect this type of mineralization.

In the east, minor sphalerite occurs at one locality associated with a small, pyritized, quartz-carbonate veined breccia zone in a rhyolite flow. Locally anomalous soil samples from this area probably reflect this type of mineralization.

Soil samples with anomalous values in lead and silver from the extreme eastern part of the claim group are associated with rhyolite flows and rhyolitic flow breccias. No associated mineralization was observed during mapping.

INTRODUCTION

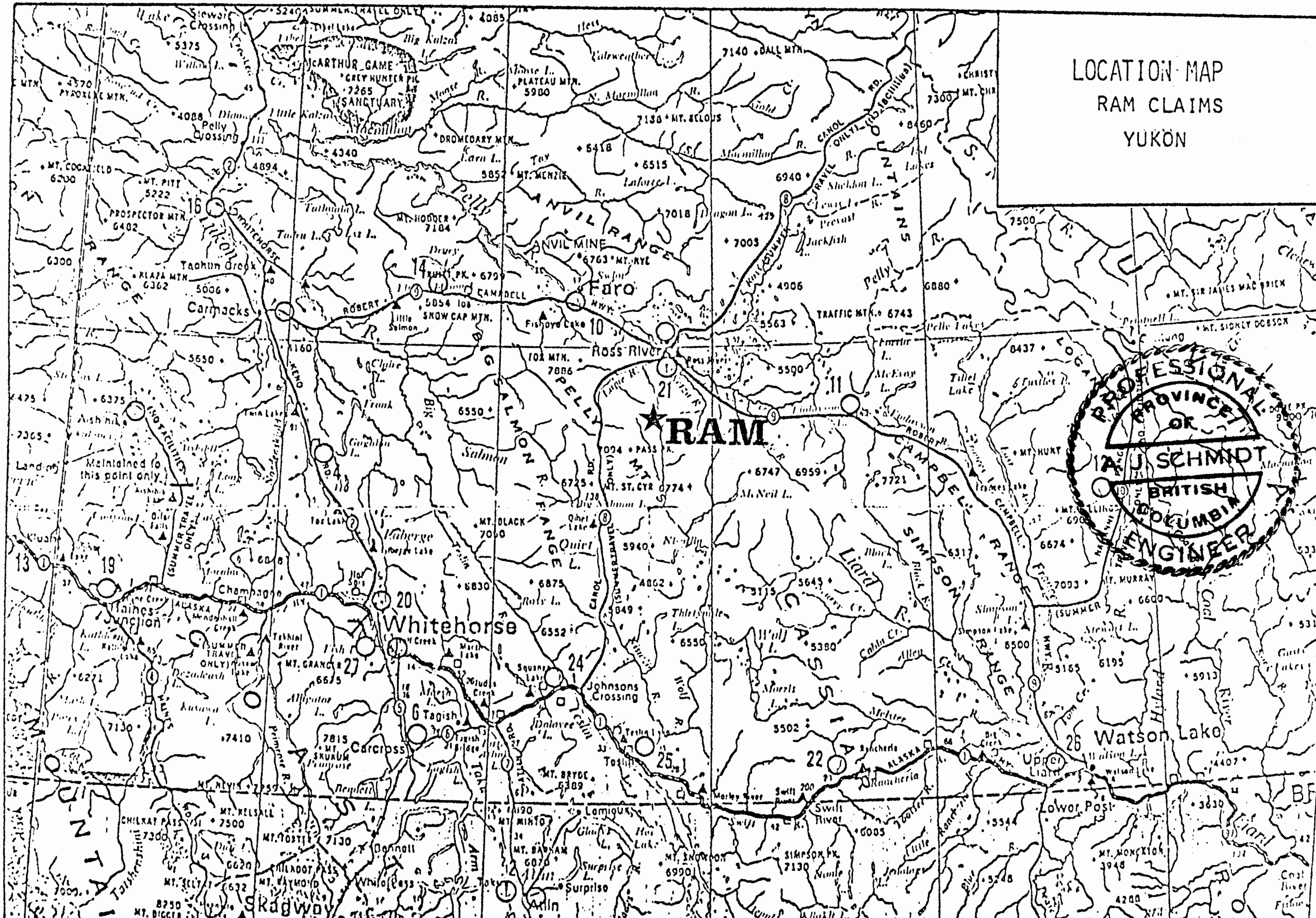
The RAM claim group is located in the Pelly Mountains, Yukon Territory, approximately 35 kilometers south of the town of Ross River. The claims lie within the Quiet Lake map sheet, in NTS 105-F/10 at latitude 61°41N and longitude 132°38'W. Access to the claims is by helicopter from Ross River.

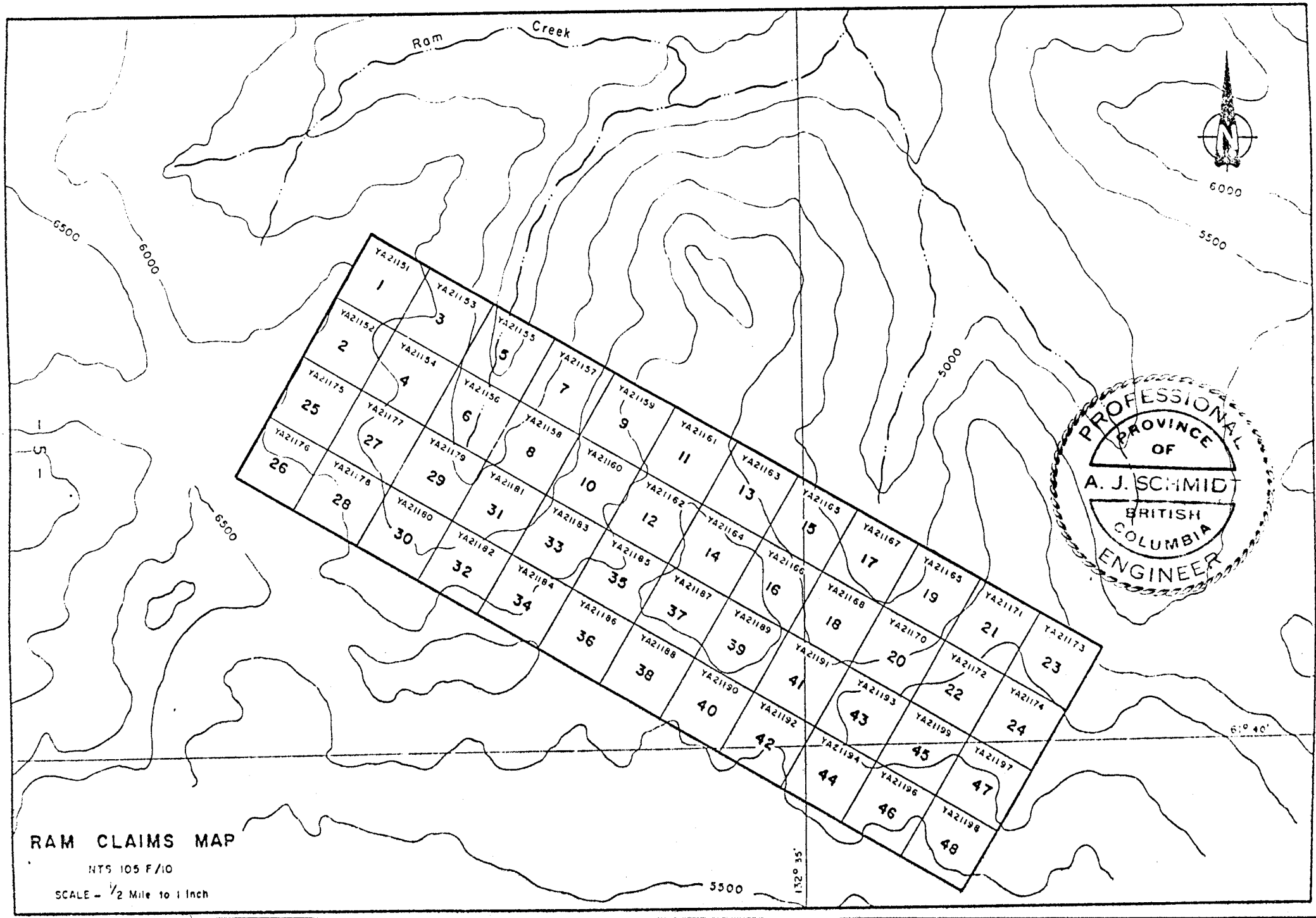
Elevations on the claim group range from 4500 feet to 6600 feet. Topography is steep with many cliff sections on north facing slopes. The property is entirely above tree line (approximately 4500 feet) with a high percentage of rock exposure. Adequate water is supplies by two major north draining creeks and by small cirque lakes in the western part of the property.

CLAIMS

The RAM 1-48 claims were staked on June 15th and 16th, 1977 in the names of P. Garossino, B. Lum. D. Duncan, D. Butler, J. Opre and J. Wilson. The claims were recorded at the Watson Lake mining recorders office on July 14th, 1977. Transfer of title to the claims to Utah Mines Ltd. was registered on 26th October, 1977. The claims comprise a contiguous block four wide and twelve long staked on a bearing of 120° from true north.

Claim Name	Record (Claim Tag) Numbers
RAM 1 to 48 inclusive	YA21151 to YA21198 inclusive


LOCATION MAP
RAM CLAIMS
YUKON
RAM
Whitehorse
Faro
Ross River
Carmacks
Watson Lake
Johnsons Crossing
Carcross
Tagish
Teslin
Haines Junction
Champagne
Skagway
Pelly Crossing
ANVIL RANGE
ANVIL MINE
PELLY MTS
CAMPBELL RANGE
SIMPSON RANGE
SALMON RANGE
CASSIAR
Liard R.
Maintained to this point only
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. J. SCHMIDT



RAM CLAIMS MAP

NTS 105 F/10

SCALE – 1/2 Mile to 1 Inch

WORK PROGRAM 1977

The work program carried out in 1977 included prospecting, geological mapping at 1:5000 scale, reconnaissance soil and silt sampling and rock chip geochemical sampling. Personnel involved in the program were transported to the property daily from a base camp at Fox Creek, 24 kilometers to the northwest.

Regional Geology

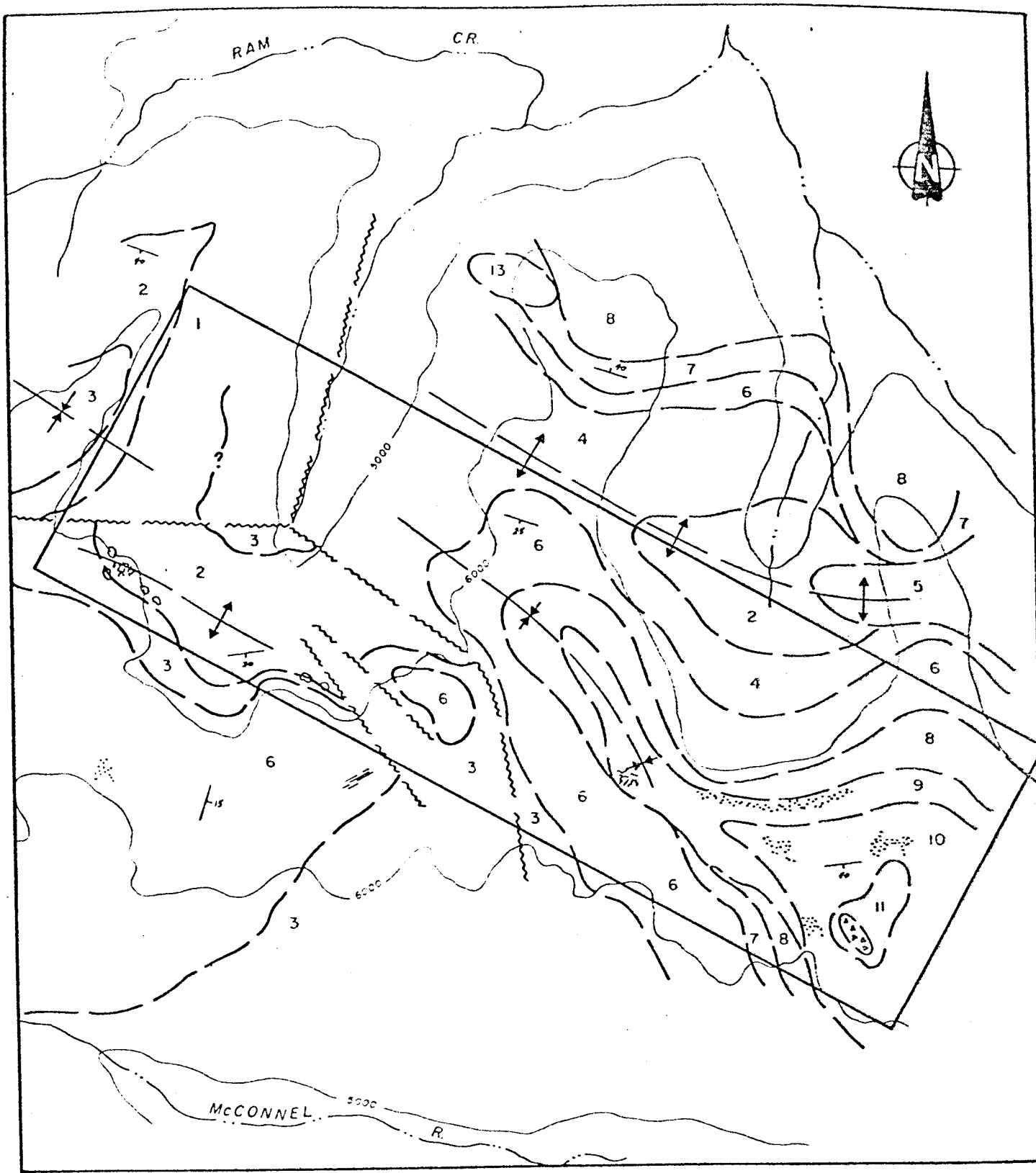
The regional setting of the Pelly Mountains area has been summarized by Templeman-Kluit (1976, 1977). The core of the Pelly Mountains is underlain by a miogeoclinal assemblange of clastic sediments, platform carbonates and volcanics ranging in age from Upper Proterozoic to Triassic. These rocks are part of the Pelly-Cassiar Platform. A belt of time-equivalent shales and associated clastic sediments, lying to the northeast of the platform, are facies equivalents of rocks found within the Selwyn Basin. Southwest of the platform are metamorphosed shales, quartzites and volcanics rocks of the Yukon-Omineca Crystalline Terrain which are believed to be of Paleozoic age. The metamorphic rocks are locally covered by an overthrust assembly of late Paleozoic basalts, serpentinised peridotite and chert which are part of the Anvil-Campbell Allochthon.

In the southern Quiet Lake map area (NTS 105-F) the metamorphic rocks and overlying basic and ultrabasic assemblage have been thrust northeastwards over Upper Triassic rocks of the Pelly-Cassiar Platform. The Platform assemblage has also been affected by complex internal folding and faulting of post Triassic age. The entire region has been extensively invaded by mid-Cretaceous granodiorite intrusions.

The RAM claim group is located within the central Pelly Cassiar Platform.

Local Geology

Regional stratigraphic relationships indicate that the rocks underlying the RAM claims are of Devonian and



LEGEND

13	Diorite	5	Rhyolite flows		Abundant dissem pyrite
11	Rhyolite flows	4	Dacite flows		Banded pyrite
10	Rhyolite tuffs	3	Dolomite, Limestone		Fault
9	Rhyolite flows	2	Black shale		Rhyolite breccia
8	Andesite - Dacite flows	1	Andesite tuffs		Anticline, Syncline
7	Felsic tuffs		Pods of massive Po, Cp_y		Bedding
6	Grey shale		Sphalerite breccias		Geologic contact

RAM CLAIM GROUP

NTS 105 F–10

GEOLOGY

PELLY MOUNTAINS, YUKON

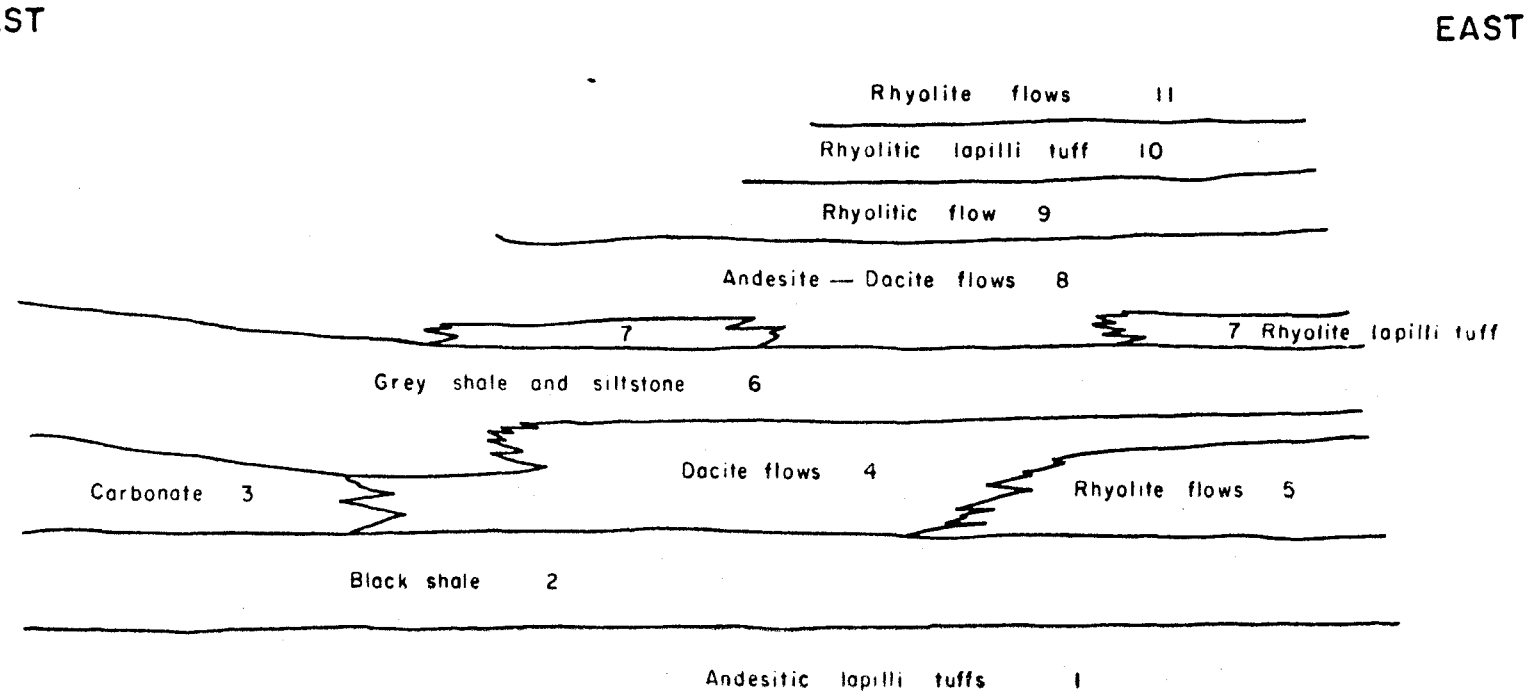
Mississippian age. In general terms, the southwestern parts of the claims are underlain by sedimentary carbonates, shales and siltstones; whilst probable time equivalent shales and volcanic rocks outcrop to the northeast. Rapid lateral and vertical facies changes, folding and faulting inhibit interpretation of stratigraphic relationships.

The stratigraphically lowest unit (1) - exposed in the northwest corner of the claim block - consists of brown weathering, pale green, intermediate lapilli and crystal tuffs. Thin black shale beds are present near the top of the tuff unit which is gradational into overlying black, pyritic shales of unit 2.

In the western cirque, black pyritic shales correlated with unit 2 are heavily silicified and partly hornfelsed and the base of the shales is not exposed. Weakly pyritic black shales are also exposed at approximately the same structural level in the eastern cirque.

Rapid lateral facies changes characterize the units overlying the black shales. Steep cliffs of buff weathering carbonate, exposed in the western cirque, are composed of pale green, silicified, laminated limestone (unit 3). When traced to the southeast, this unit produces only sporadic outcrop of massive, thick bedded grey dolomite. The silicification of the carbonate unit in the western cirque is probably related to intrusion of a small syenite stock of

SCHEMATIC FACIES RELATIONSHIPS



RAM CLAIM GROUP

NTS-105 F/10

probable Mississippian age which outcrops to the southwest.

The carbonate unit gives way laterally and rapidly to a sequence of massive, pale green dacitic flows (unit 4) which immediately overlie the black shale (unit 2) in the northeast. The dacitic flows are locally porphyritic with quartz phenocrysts and appear to thins rapidly towards the east. Fine grained, cream colored, chloritic and pyritic rhyolite flows (unit 5) exposed only in the easternmost ridge, are overlain in part by the dacitic flows and are in part lateral facies equivalents to them.

A thick sequence (unit 6) of Mississippian, grey, laminated siltstones and shales - all of which are weakly silicified- outcrops extensively on high ground above the carbonate horizon in the southwest of the area. This clastic package thins gradually towards the northeast and changes facies to weakly pyritic black shales with minor siltstones. This unit appears to pinch out completely to the northeast and east.

A thick package of intermediate and acidic volcanics overlies the siltstone unit in the eastern part of the claim block but is absent from the western part. A thin felsic unit (7) of variable composition and irregular lateral extent immediately overlies the siltstones. Unit 7 is composed of coarse grained, grey-green rhyolitic lapilli tuff in the northeast. In the central parts of the claim

block it consists of light grey, schistose, felsic crystal tuffs overlain by thin grey-cream colored, fine grained, weakly pyritic felsic flows.

The overlying unit of relatively intermediate volcanic flows (unit 8) has a fairly constant thickness throughout the eastern half of the claim block. The unit consists of relatively massive, brown weathering, pale green to mauve colored fined grained, flow banded andesite to dacite. Towards the southeast the unit becomes more andesitic and locally contains porphyritic flows and thin, coarse breccias.

Massive, light green to cream colored rhyolite flows (unit 9) with pervasive chloritic alteration and disseminated pyrite occur stratigraphically above the intermediate flows. Abundant quartz-siderite veins characterize this horizon. Vesicular rhyolite flows are present east of the area.

Intermediate to acid lapilli tuffs of unit 10 display a wide range in texture. Angular rhyolitic fragments vary from less than one centimetre in size to blocks greater than 0.5 meters in width. The matrix is heavily chloritized and contains veins of chlorite up to 2 cm. in width. The coarse felsic tuffs are interbedded with fine grained, brown, laminated graded tuffs of more intermediate composition.

The uppermost unit (11) in the volcanic sequence consists of fine grained, cream colored rhyolite flows which are locally porphyritic with quartz phenocrysts. Rhyolite flow breccia and areas of heavy quartz-siderite veining

occur locally. Weak chloritic alteration is pervasive and disseminated pyrite is locally important.

Intrusive rocks locally cut both the sedimentary and volcanic packages and are believed to be approximately coeval with the Mississippian volcanism. Fine grained, cream colored, pyritic felsite sills and dykes intrude siltstones of unit 6 in the western part of the area. These are believed to be of trachytic composition and related to a larger syenitic stock which outcrops to the southwest.

Fine grained, massive diorite intruding siltstones and volcanics of units 6, 7 and 8 occurs at the north end of the central ridge. An isolated outcrop of similar diorite occurs in the bottom of the eastern creek. The area between these outcrops has not been mapped and their relationships are uncertain.

A relatively extensive feldspar porphyry sill intrudes the contact between volcanic units 7 and 8. Intense chloritic alteration is characteristic of this sill.

Structure

The sedimentary-volcanic package is mildly deformed by relatively open, large scale folds with upright axial planes striking northwesterly and undulating fold axes which - in general - plunge at shallow angles to the southeast. The black shales of unit 2 locally contain a prominent cleavage dipping steeply to the northeast.

Two documented faults and a third postulated fault intersect at a triple junction in the western part of the property. The three faults strike east-west, NW - SE and NNE - SSW and appear to be relatively steeply dipping structures with dominantly vertical displacements. The faults define a northeasterly block which has moved down relative to both other blocks; a northwesterly block which has moved up relative to both; and a southwesterly block of intermediate relative movement. Further mapping is required to confirm the existence of the NNE - SSW trending fault.

Mineralization

1) Sediment hosted type:
Minor sulphide occurrences are present within the sediments of the southwestern fault block. Small lenses of massive pyrrhotite and pyrite with small blebs of chalcopyrite are found within the carbonate. Hydrozincite occures sporadically through the silicified black shales near this contact. None of these mineral occurrences was considered to be significant.

2) Volcanic hosted type:
Disseminated, fine grained pyrite occurs extensively throughout the rhyolitic flows of the eastern half of the claim block. Local concentrations of disseminated pyrite are found associated with more intensive quartz-siderite vein networks and with rhyolite flow breccias. Hydrozincite coatings occur in one locality in the main saddle of the central ridge.

RAM Claims - Rock Chip Samples

R-A-1 Chloritic rhyolite - 40 ft. vertical chip - south face.

R-A-2 Chloritic rhyolite - 60 ft. horizontal chip - 50 ft. below top of ridge.

R-B Pyritic rhyolite flow - gossan - 50 ft. vertical chip.

R-C Pyritic rhyolite flow - 80 ft. oblique chip - approx. 70 ft. stratigraphic.

R-D Pyritic rhyodacite - 100 ft. horizontal chip.

	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
RA-1	34	64	125	0.4	15
RA-2	20	26	26	0.3	ND
RB	6	18	8	0.4	L.5
RC	10	62	120	0.5	L.5
RD	8	52	115	0.6	ND.

GEOCHEMICAL SURVEY

A total of 48 stream sediment samples (silt), 51 soil samples and six rock chip samples were collected during the geochemical survey. The soil samples were taken in order to characterize the geochemical response of the various rock units present and no attempt was made to follow a regular grid survey.

The soil samples were taken, where possible, from the "C" soil horizon and placed in Kraft sample envelopes marked with the sample location. At locations where a soil horizon was not present, samples were taken from fine grained talus material. All samples were forwarded to Bondar Clegg and Co. Ltd., 136B Industrial Road, Whitehorse, Yukon, for analysis. After drying in an electric oven, the samples were screened and the minus 80 mesh fraction was digested in a perchloric-nitric acid solution. Quantitative analysis of silver, copper, lead and zinc was performed by the atomic absorption technique and results recorded in parts per million (ppm). Background corrections were applied to all silver and lead analyses.

Statistical analysis of geochemical soil sample results from surrounding areas of this Mississippian volcanic and sedimentary terrain indicates the following effective threshold values: copper 65 ppm, lead 90 ppm, zinc 250 ppm. The corresponding values for silt samples are: copper 60 ppm, lead 70 ppm, zinc 300 ppm. Statistical analysis of silver values has not been undertaken but any values greater than 1.0 ppm are considered "interesting".

A significant number of both the soil and silt samples collected in the area of the RAM claims are geochemically anomalous for one or more of the elements Cu, Pb, Zn, Ag.

Western Area

Silt samples taken from a creek draining an area of black shales and carbonates in the western part of the claims are weakly to moderately anomalous in zinc and copper values. Similarly, soil samples taken from the vicinity of the shale-carbonate interface are anomalous for copper and zinc and sporadically anomalous are lead. These anomalies probably reflect known mineral occurrences including chalcopyrite in small pyrrhotite pods and hydrozincite associated with black shales. Two rock chip samples - each consisting of random chips taken over a small, pyrite rich area in silicified black shales - are geochemically anomalous for both lead and zinc.

East-Central Area

Silt samples taken from creeks draining the predominantly acid volcanic rocks underlying this part of the claim group are weakly and sporadically anomalous for zinc. Several soil samples from this area are strongly anomalous for zinc, weakly anomalous for copper and sporadically anomalous for lead and/or silver. The anomalous samples probably reflect mineralization associated with zones containing abundant pyrite and quartz-carbonate veining occurring in rhyolitic flows. Four rock chip samples taken from this general area

contain surprisingly low concentrations of base metals.

Eastern Area

Soil samples taken from an area underlain by rhyolitic flow breccias in the extreme eastern part of the property are anomalous in lead and silver. No economic mineralization was observed in these rocks during geological mapping.

CONCLUSIONS & RECOMMENDATIONS

The western part of the claim group is underlain by black silicified shales and carbonates in the contact aureole of a syenitic stock. Minor chalcopyrite occurs in small pyrrhotite pods in the carbonates, and hydrozincite is present in the shales.

The eastern part of the claim group is underlain predominantly by Mississippian felsic volcanic flows and tuffs. Minor hydrozincite occurs at one locality associated with a pyritized, quartz-carbonate veined, breccia zone in a rhyolitic flow. Soil samples taken from an area further east, which is underlain by rhyolite flows and rhyolite flow breccias, contain anomalous quantities of lead and silver. No associated mineralization has been found in outcrop.

Further work is required to investigate the soil anomalies present in the eastern part of the claim block.

REFERENCES

Templeman-kluit, D.J., Gordey, S.P. and Read, B.C. (1976): Stratigraphic and structural studies in the Pelly Mtns. Yukon Territory; Geol. Surv. Can. Paper 76A-1A, pp 97-106.

Templeman-kluit, D.J. (1977): Stratigraphic and structural relations between the Selwyn Basin, Pelly-Cassiar Platform and Yukon Crystalline Terrace in the Pelly Mtns, Yukon Territory; Geol. Surv. Can. Paper 77-1A pp 223-227.

Morin, J.A. (1977): Ag-Pb-Zn mineralization in the MM deposit and associated Mississippian felsic volcanic rocks in the St. Cyr Range, Pelly Mtns., in "1976 Yukon Mineral Industry Report" - Open File edition, May 2, 1977.

CLAIM BLOCK BOUNDARY

Brown weathering intermediate crystal tuff

Black shale

Brown tuff & Black shale and talus

Light green tuff, siderite veins

Black rusty shale

Talus

Light green intermediate lapilli tuff

Intermediate tuffs

Light green fine grained dacite flow, locally porphyritic

Intermediate lapilli tuffs

Overburden

Black shales

Light green meta-limestone

Thin laminated light green meta-limestone

Fine grained diorite

Black shales.

Felsite dykes.

Buff weathering massive dolomite

Thin bedded black silty dolomite

Thin bedded grey shale

meta-limestone talc-carb. alteration

Black shale locally silicified

Qtz-carb breccia (Hz sphalerite)

massive po

Grey shale

Small pod of massive po

Massive light green laminated meta-limestone (silicified)

Massive black meta-shale (silicified)

Massive po hydrothermite pods

Grey laminated siltstone (w/ ripple marks

Thin pyritiferous horizon

Grey black laminated siltstone

Light green felsite dyke pyrite

Narrow felsic dykes

Siltstone

Light green felsic dyke pyrite

Grey laminated siltstone

Grey siltstone ripple marks py

Grey siltstone with fine grained pyrite as disseminations, laminations and fracture fillings

Dark grey laminated siltstone

Felsite sill (pyritic)

Grey well bedded siltstone

Grey buff laminated siltstone

Grey green laminated siltstone

Black shale

Grey green laminated meta limestone

Py, Po, cpy (Talus)

Silicified black shale

Green grey meta-limestone

Grey laminated limestone

Light green felsite sill

Black bedded silty shale

Felsite sill

Meta limestone

Black rusty silty shale

Silicified limestone

Light green fine grained felsite sill

Silicified shale

Shale siltstone thin bedded pyrite

Brown weathering dolomite

Grey limestone

Grey laminated limestone

Black silty shale

Massive grey silicified limestone

Thin bedded black shale

Grey unmeta limestone

Rusty felsic dyke

Meta limestone magnetite, pyrrhotite

Black laminated silty shale

Light green, rusty silicified limestone, with small massive pyrite and pyrrhotite pods.

LEGEND:

- 14 Fine grained trachytic felsite
- 13 Fine grained diorite
- 12 Feldspar porphyry
- 11 Rhyolite flows, locally porphyritic
- 10 Rhyolitic lapilli tuff, andesitic laminated tuffs
- 9 Massive rhyolitic flows
- 8 Massive andesitic to dacitic flows, locally porphyritic, local breccia
- 7 Coarse grained rhyolitic lapilli tuff, felsic crystal tuff, felsic flows
- 6 Grey and black shale and siltstone
- 5 Chloritic, pyritic rhyolite flows
- 4 Dacite flows
- 3a Silicified, laminated limestone
- 3b Massive grey dolomite
- 2 Black pyritic shale
- 1 Andesitic lapilli and crystal tuffs

Bedding; Cleavage; Fault; Anticline; Syncline; Outcrop; Geologic contact

Quartz – siderite veining; Intense chloritic alteration; Heavily disseminated pyrite; Sulphide mineralization – outcrop; Float; Breccia

Topographic Contour Interval = 100 feet

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — A. J. SCHMIDT

UTAH MINES LTD.

EXPLORATION DEPARTMENT

VANCOUVER BRITISH COLUMBIA

PELLY MOUNTAINS – YUKON

RAM CLAIMS *(West)*

GEOLOGY

Work by J. Wilson	Date: March 1978	NTS Ref. 105 F/10
Drawn by T. Drews	Revised	Scale — 1:5,000

090321

LEGEND:

14	Fine grained trachytic felsite	7	Coarse grained rhyolitic lapilli tuff, felsic crystal tuff, felsic flows		Bedding
13	Fine grained diorite	6	Grey and black shale and siltstone		Cleavage
12	Feldspar porphyry	5	Chloritic, pyritic rhyolite flows		Fault
11	Rhyolite flows, locally porphyritic	4	Dacite flows		Anticline
10	Rhyolitic lapilli tuff, andesitic laminated tuffs.	3a	Silicified, laminated limestone / 3b Massive grey dolomite		Syncline
9	Massive rhyolitic flows	2	Black pyritic shale		Outcrop
8	Massive andesitic to dacitic flows, locally porphyritic, local breccia	1	Andesitic lapilli and crystal tuffs		Geologic contact

////	Quartz - siderite veining
c_c^c	Intense chloritic alteration
∴	Heavily disseminated pyrite
○	Sulphide mineralization - outcrop
X	Float
△	Breccia

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

PELLY MOUNTAINS - YUKON
RAM CLAIMS (East)
GEOLOGY

Work by J. Wilson	Date: March 1978	NTS Ref 105 F/10
Drawn by T. Drews	Revised	Scale - 1:5000

PROFESSIONAL PROVINCE OF A. J. SCHMIDT BRITISH COLUMBIA ENGINEER

090321

CLAIM BLOCK BOUNDARY

6000

5500

5000

6500

61°40'

133°40'

LEGEND

△ Rock Sample

□ Soil Sample

○ Silt Sample

Cu | Zn
Ag | Pb

PROFESSIONAL ENGINEER
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A. J. SCHMIDT

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EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

PELLY MOUNTAINS – YUKON
RAM CLAIMS *(West)*
GEOCHEMISTRY

Work by C.W.	Date: February 1978	NTS Ref. 105 – F/10
Drawn by T. Drews	Revised	Scale – 1:5000

090321

CLAIM BLOCK BOUNDARY

61°40'

132°35'

LEGEND

□ Soil Sample

○ Silt Sample

△ Rock Sample

Cu | Zn
Ag | Pb

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EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

PELLY MOUNTAINS - YUKON
RAM CLAIMS *(East)*
GEOCHEMISTRY

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