

**MICROFILMED**

DATE.....

062167  
Sept. 8, 1983.  
PROSPECTUS

**GEOLOGICAL REPORT  
RUN CLAIMS  
WATSON LAKE MINING DIVISION  
YUKON TERRITORY**

**Location**

**NTS: 105-B-1**

**Latitude: 60°03'48"**

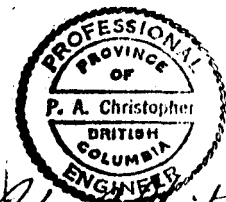
**Longitude: 130°10'30"**

**For**

**Tungco Resources Corporation  
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**By**

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*Peter A. Christopher*  
April 22, 1983

## TABLE OF CONTENTS

	<u>PAGE</u>
SUMMARY	1
INTRODUCTION	2
LOCATION AND ACCESS	2
TOPOGRAPHY	3
CLAIMS AND HISTORY	3
REGIONAL GEOLOGY	6
MINERAL DEPOSITS IN THE AREA	10
DISCUSSION OF THE RUN CLAIM AREA	21
CONCLUSIONS AND RECOMMENDATIONS	22
COST ESTIMATES	24
BIBLIOGRAPHY	27
CERTIFICATE	29

## LIST OF ILLUSTRATIONS

FIGURE 1	Location Map	4
FIGURE 2	Claim Map	5
FIGURE 3	Regional Geology, Rancheria Area	7
FIGURE 3A	Regional Geology, Midway Area	13
FIGURE 4	Stratigraphic Column, Midway Deposit Area	15

## TABLE

TABLE 1	Summary of Run Claim Data	3
TABLE 2	Legend for Figure 3A	14

### SUMMARY

The Run Claims are situated about 11 kilometres (7 miles) north of the Regional Resources "Midway" silver-lead-zinc deposit and about 6 kilometres (3.6 miles) north of Regional Resources Ewan barite deposit. Considering the proximity of the Run Claim area to the Midway deposits and the similar geological setting, a basic (Stage I) exploration program of prospecting, mapping, and rock, silt and soil geochemistry is highly recommended and a follow-up (Stage II) geochemical and geophysical program should also be considered. The Stage I program is estimated to cost \$23,000 and the Stage II program is estimated to cost \$34,000.

If the Stage I and Stage II programs are successful in defining strong anomalies or silver-lead-zinc or barite mineralization, then a Stage III diamond drilling program will be warranted. A 400 metre diamond drilling program is estimated to cost \$100,000.

## INTRODUCTION

The Run 1 to 28 mineral claims are situated immediately north of the Midway property of Regional Resources Ltd. (Amax-Procan option) and seven miles (11 kilometres) north of the "Midway" silver-lead-zinc deposit. Discovery of the "Midway" silver-lead-zinc stratiform mineral deposit near the Tootsee River in 1981 by Regional Resources has encouraged re-evaluation of adjacent areas with similar geology for silver-lead-zinc or barite deposits. The "Midway" deposit is hosted by Silurian and Devonian units similar to those mapped by the Geological Survey of Canada in the Run claim area. Figure I shows the location of the Run claims with respect to the Midway deposits and other significant deposits in Northern British Columbia and the Yukon Territory.

The writer has not examined the area of the Run claims because of excessive snow cover, but has worked on several properties in the area. This report is based on a review of published government and company reports, and the writer's experience with other Selwyn Basin and Kechica Trough lead-zinc-silver-barite exploration programs. It outlines basic initial (Stage I and Stage II) programs and a possible follow-up (Stage III) program for evaluating the economic potential of the Run claim area. Cost estimates are based on minimum use of helicopter time which will require careful planning. Casual helicopters are available at Watson Lake or at Rancheria (between May and October, 1983) and periodically at Swift River (64 km) or the Pine Lake air strip (55 km).

## LOCATION AND ACCESS (Figures I and II)

The Run Claims are situated between about 5 kilometres and 7 kilometres east of the Tootsee River about 115 kilometres (72 miles) west of Watson Lake, Y.T. and 22 kilometres (13.7 miles) east of Rancheria, a small settlement on the Alaska Highway. The Tootsee Lake Road, a gravel access road which leaves the Alaska Highway at mile post 701 provides four wheel drive access to within 5 kilometres of the Run Claims and the Alaska Highway passes within 6 kilometres of the claims. Equipment and supplies can be shipped to within 5 kilometres of the property, but helicopter support will be required because crossing the Tootsee River or Rancheria River makes road construction costs prohibitive for an initial exploration program.

Fuel and accommodation are available at Rancheria, Y.T. and most supplies and services are available at Watson Lake, Y.T. which is serviced by daily jet flights from Whitehorse and Vancouver.

### TOPOGRAPHY

The Run Claims lie between 1,067 metres (3,500 feet) and 1,341 metres (4,400 feet) which gives the claim area a moderate relief of 274 metres. The claim area straddles timber line.

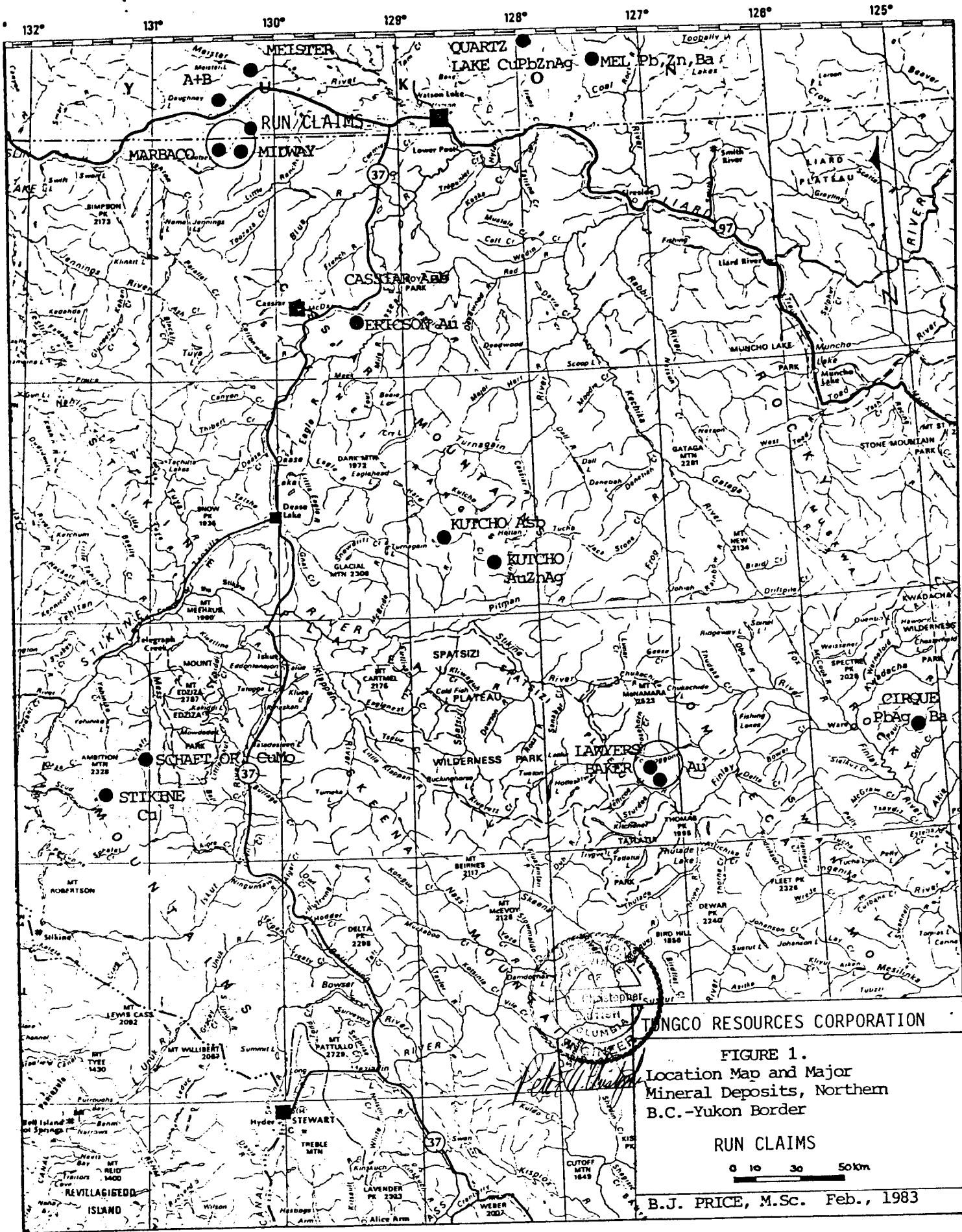
### CLAIMS AND HISTORY

The Run Claims with grant numbers YA69656 to YA69671, YA69746 to YA69751, and YA69812 to YA69817 were recorded in February, 1983. Table I provides a summary of pertinent claim data. Snow cover prevented field confirmation of claim data obtained from staking plans and claim map 105-B-1 (Department of Northern Affairs and Natural Resources). The maximum possible ground coverage of 20.9 hectares (51.65 acres) per claim could be reduced by overlap of adjacent claims or less than maximum spacing of posts. Field checking of post locations should be part of the Stage I program.

The writer suspects that the area has been staked in the past but has been unable to find any records of previous exploration work.

Table I - Summary of Run Claim Data (NTS 105-B-1). Data obtained from the recording office at Watson Lake, Y.T.

<u>Claim Name</u>	<u>Record No.</u>	<u>Date Recorded</u>	<u>Work Due</u>	<u>Staker</u>
Run 1-6	YA69812-817	Feb. 16/83	Feb. 16/84	Carol Hart
Run 7-14	YA69656-663	Feb. 11/83	Feb. 11/84	Doreen Paish
Run 15-22	YA69664-671	Feb. 11/83	Feb. 11/84	Sandra Koehl
Run 23-28	YA69746-751	Feb. 15/83	Feb. 15/84	Bud Bolton



YUKON TERRITORY DEPARTMENT OF MINES  
**YUKONCO RESOURCES CORPORATION**

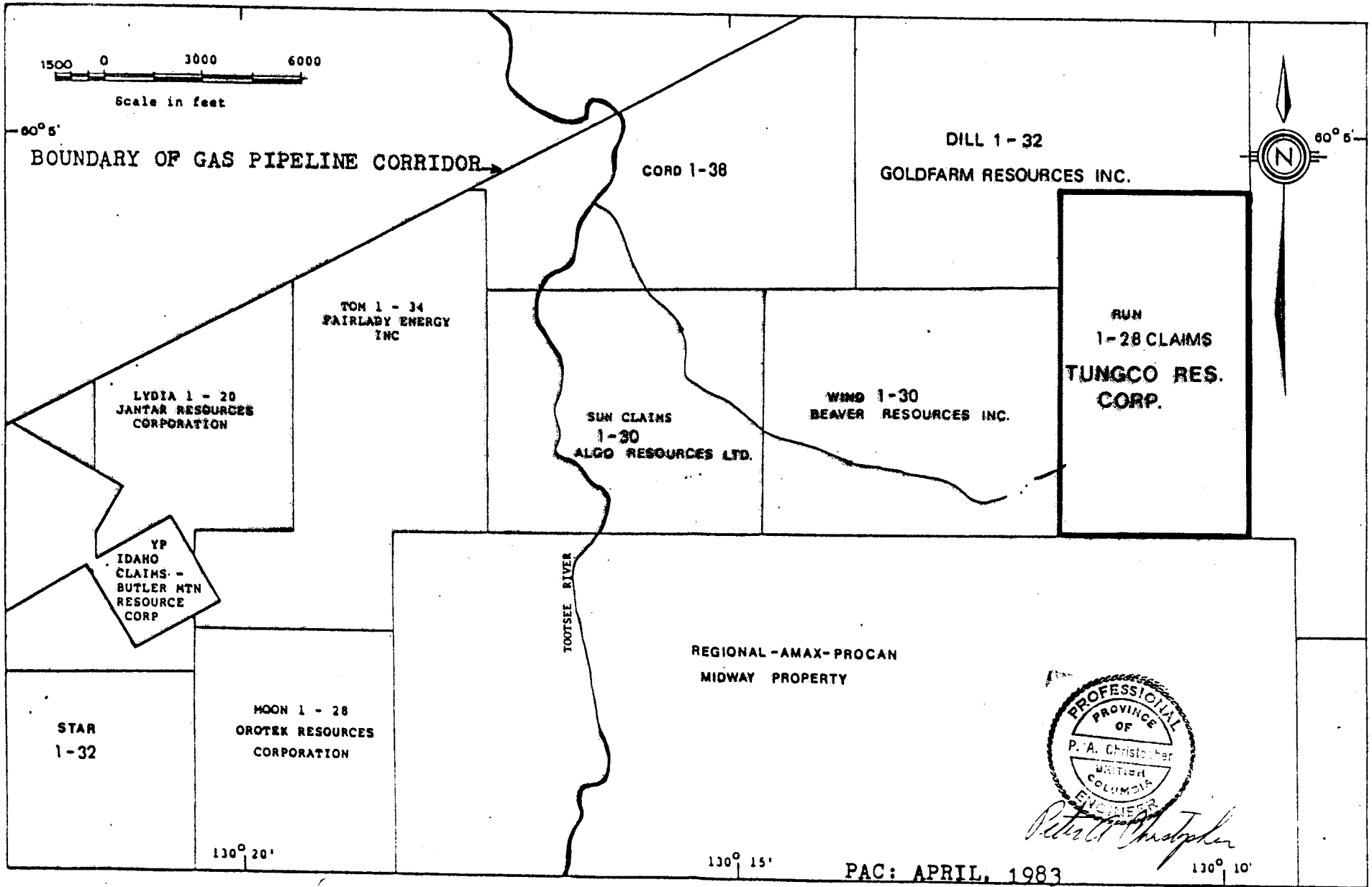
**FIGURE 1.**  
 Location Map and Major  
 Mineral Deposits, Northern  
 B.C.-Yukon Border

**RUN CLAIMS**

0 10 30 50km

B.J. PRICE, M.Sc. Feb., 1983

FIGURE II. CLAIM MAP FOR THE RUN CLAIM AREA, TUNGCO RESOURCES CORPORATION. DATA FROM GOVERNMENT CLAIM MAP 105-B-1 AND STAKING PLANS. FIELD CHECKING IS REQUIRED.



### **REGIONAL GEOLOGY (Figure 3)**

The area of interest is situated on the east flank of the Cassiar batholith which extends over 300 km southeasterly from Wolf Lake map sheet in the Yukon to the Kechika map area in British Columbia. In the Jennings River and Cassiar-McDame map areas and the south part of Wolf Lake area the eastern flank is underlain by Paleozoic rocks from Cambrian to Carboniferous in age and separable into two or more contrasting assemblages, some of which are believed to be "allocthonous" (i.e., deposited elsewhere and moved into place along flat lying faults) (Gabrielse and Mansy, 1980).

Rocks are described by Poole (Map 10-1960) and by Gabrielse (GSC Paper 68-55, 1968); brief descriptions of the mapped units are summarized below:

#### **Units 1 and 2: (Lower Cambrian)**

Unit 1 consists of biotite schists, quartzite, marble and skarn, with areas of extensive sills, dykes and irregular bodies of pegmatites, particularly near the contact with the Cassiar batholith.

Unit 2 contains quartzite, slate and phyllite, quartz grit and fine pebble conglomerate. Adjacent to the batholith the rocks are hornfelsed.

#### **Unit 3: (Lower Cambrian)**

This unit, which is host to numerous lead-zinc-silver showings in the area, contains grey limestone, grey to green argillite and slate, and dolomite. The unit is converted to skarn adjacent to the batholith.

#### **Unit 4: (Middle Cambrian to Silurian)**

Slates, phyllites and limestone, buff to dark grey, with dolomite and dolomitic limestone partly converted to skarn forms a unit which is difficult to separate from units 2 and 3.



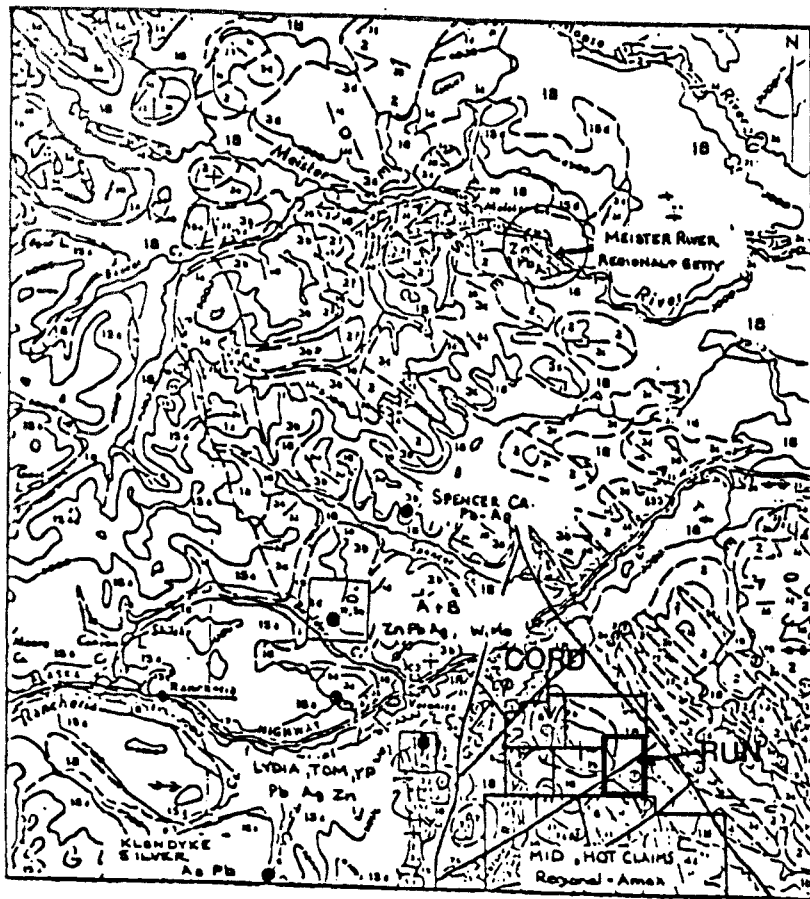


FIGURE 3. Regional geology of Rancheria area, Y.T.,  
 Portion of G.S.C. Map 10 - 1960 (Wolf  
 Lake). Scale: 1 in = 6.5 miles.

LEGEND

QUATERNARY

PLEISTOCENE AND RECENT

- 16 Glacial (fill); gravel, sand, and silt; lake clay; volcanic ash

TERTIARY (?) AND QUATERNARY

- 17 Vesicular olivine basalt

CRETACEOUS OR TERTIARY

UPPERMOST CRETACEOUS OR LOWERMOST TERTIARY

- 18 SEAGULL AND MAKE BATHOLITHS AND STOCKS; mainly biotite leuc-quartz monzonite and alaskite, in places with quartz-tourmaline concentrations and microcline cavities

JURASSIC AND/OR CRETACEOUS

- 18 13a, CASSIAR BATHOLITH; mainly biotite quartz monzonite and granodiorite, in part sheared and altered; 13b, RAM STOCK; saussuritized biotite-hornblende quartz monzonite and granodiorite, in part sheared; 13c, LOGJAM STOCK; mainly biotite-hornblende quartz monzonite with basic borders; 13d, mainly biotite quartz monzonite and granodiorite; 13e, mainly biotite-muscovite granodiorite

- 14 Dioritic rocks; diorite, granodiorite, quartz diorite; 14a, includes gneiss, hornblende

- 13 Ultramafic rocks; olivine-bearing clinopyroxenite, diorite; serpentinitized and metamorphosed equivalents

PERMIAN TO JURASSIC (?)

- 12 12a, pebble and cobble conglomerate, graywacke, limestone; minor quartzite, chert; 12b, andesitic volcanic breccia and tuff; minor lava(?) 12c, feldspathic quartzite, graywacke, quartzite, grit, argillite, silty; 12d, silty micaceous, may be in part equivalent to 12a and 12b

MISSISSIPPIAN

LOWER AND MIDDLE MISSISSIPPIAN

- 11 Upper Division; chert, slate, argillite, hornfels; minor graywacke; 11a, limestone and dolomite, in part with chert nodules, shara; 11b, sandy and conglomeratic tuff

- 10 Lower Division; chert and quartzite pebble and cobble conglomerate, chert, quartzite, slate, argillite, hornfels

DEVONIAN AND MISSISSIPPIAN

UPPER DEVONIAN AND LOWER MISSISSIPPIAN

- 9 Limestone and dolomite, in part with chert nodules, shara

- 8 Chert, hornfels, argillite, slate, phyllite, quartzite, limestone, in part with chert nodules, shara, tremolitic marble, dolomite; 8a, schist and gneiss

- 7 Greenstone, chlorite schist and quartzite, phyllite, slate, argillite, chert; 7a, greenstone, chlorite schist; 7b, argillite, slate, phyllite, chert, subgraywacke, grM, conglomerate, porphyro-biotite schist and quartzite; 7c, limestone and dolomite, in part with chert nodules; 7d, quartz-albite-mica gneiss, albite-actinolitic schist

SILURIAN AND DEVONIAN

MIDDLE SILURIAN AND MIDDLE DEVONIAN

- 6 Upper part: gray and black fossiliferous dolomite and calcitic dolomite; Lower part: quartzite and dolomitic quartzite

MIDDLE SILURIAN

- 5 Gray-buff dolomite; underlain by thin-bedded shale and limestone, and buff dolomitic siltstone and quartzite

CAMBRIAN TO SILURIAN

MIDDLE CAMBRIAN TO MIDDLE SILURIAN

- 4 Thin-bedded buff and gray slate, phyllite, and limestone, dark gray slate and limestone; 4a, thin-bedded buff and gray phyllite and limestone; probably Middle and Upper Cambrian; 4b, black slate, argillite, gray dolomite, and dolomitic limestone; probably Ordovician; 4c, hornfels, limestone, shara

CAMBRIAN

LOWER CAMBRIAN

- 3 3a, gray limestone; minor dolomite, slate, and phyllite; 3b, undolomitized, probably equivalent to 3a; 3c, limestone; minor gray and green argillite and slate, dolomite; may be older than 2; 3d, marble, shara

CAMBRIAN AND (?) EARLIER

LOWER CAMBRIAN AND (?) EARLIER

- 2 Quartzite, minor slate and phyllite, quartz grit and fine pebble conglomerate; 2a, phyllite, minor slate; 2b, hornfels

- 1 Probably metamorphic equivalents of 2; 1a, biotite schist and quartzite; 1b, marble and shara; 1c, biotite schist and quartzite with silt, dykes, and irregular bodies of pagonite; 1d, biotite schist and gneiss

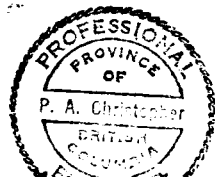
CASSIAR INTRUSIONS

- Geological boundary (defined, approximate or assumed) . . . . .
- Bedding (horizontal, inclined, vertical, estimated; g, gentle; m, medium; s, steep) . . . . . + / /
- Schistosity, gneissosity, cleavage (horizontal, inclined, vertical) . . . . . + / /
- Fault (defined, approximate, assumed) . . . . . - - - - -
- Anticline (position approximate) . . . . . +
- Syncline (position approximate) . . . . . -
- Drift ridge or rock groove (direction of ice-movement known, unknown) . . . . . ↗
- Fossil locality . . . . . ⊕

MINERAL SYMBOLS

- Fluorite . . . . . F Tin . . . . . Sn
- Lead . . . . . Pb Tungsten . . . . . W
- Silver . . . . . Ag Zinc . . . . . Zn

Geology by W. H. Peole, 1951 - 1955  
 J. A. Reddick and L. H. Green, 1959



*Peter A. Christopher*

**Unit 5: (Ordovician-Silurian)**

This unit contains mainly quartzites, dolomitic siltstone and thin-bedded shale and limestone, and is probably equivalent to unit 4 in the adjacent Jennings River map sheet.

**McDame Group - Unit 6:**

The McDame Group, dark, fetid, dolomites and limestones with abundant fossil debris, forms a distinctive marker unit. Dolomite (intraformational?) breccia is common and white vuggy dolomite may represent reefoid accumulations of fossils, representing shoals in a shallow platform environment. Fossil evidence indicates that the McDame Group is Middle Devonian in age.

**Lower Sylvester Group - Unit 7b:**

According to Gabrielse (1968) "the contact of the McDame Group with the overlying Sylvester Group is almost invariably a fault." The lower part of the unit is fine-grained, black, locally graphitic slates and phyllites, with grey to black bedded and ribbon cherts. The upper part contains argillites, interbedded with sandstones, grit and conglomerate. Cherty, fine-grained limestone may be present near the top of the unit.

Several barite-silica "exhalite" horizons are present within the lower Sylvester Group in the vicinity of the "Midway" property. Stratigraphy in this area, within the Sylvester Group is described in detail by Hylands (1981), and is shown on the following page, with a diagrammatic stratigraphic section (Figure 4).

**Upper Sylvester Group - Units 7a & 8:**

Massive volcanic rocks, including flows, breccias, tuffs and agglomerates with aggregate thickness of over 1500 feet form Unit 7; with ultramafic bodies (Unit 8) cutting the volcanics. The volcanics include basalt, dacite and rhyolite flows and coarse-grained equivalent intrusive rocks are said to exist in the unit (Gordey, et al 1982). Most rocks are pervasively altered to "greenstones", making them appear massive.

### Cassiar Batholith:

The northwesterly trending elongate Cassiar Batholith underlies the most rugged terrain in the map area. Much of the batholith consists of massive, homogeneous biotite quartz-monzonite, grey in color and medium to coarse grained in texture. Other varieties include muscovite quartz-monzonite, augen gneisses, and later pegmatitic dykes. Alteration and shearing are commonly associated features -- sericitization, chloritization and albitization are prevalent in some areas.

Other granitoid rock types occur in the Jennings River map sheet but are not within the scope of this report.

### Dykes:

Greenstone dykes are common in the batholith and also within the adjacent Paleozoic rock units. Some of the dykes are known to be lamprophyres.

### Structure:

The Sylvester "allocthon" is characterized by a broad, northwesterly-trending synclinal feature commonly referred to as the McDame Synclinorium. This feature parallels the contact of the Cassiar batholith in a general way but is modified by smaller scale folds conforming to embayments in the batholith, as is seen near the Marbaco property. Tight folding in Cambrian-Silurian rocks is present near Tootsee Lake. Strong northwest to northeast faulting has also affected the area, as is seen in the accompanying geological map (Figure 3). Most faults are steep, normal faults such as the north-trending, easterly dipping fault cutting through the western portion of the Midway property. Faults are marked by depressions and green dykes, some of which are schistose, indicating continued movement.

Low angle faults, probably related to the hypothesized sole fault of the allocthon, are known to cut the Sylvester sequence in the vicinity of the Midway deposit (Hylands, 1981).

A strong shear zone trends northwest through the Cassiar batholith west of Tootsee Lake, and along this feature pervasive shearing and mylonization occurs over widths of 2 miles.

The Sylvester allocthon appears to pinch out in the vicinity of the Alaska Highway in Wolf Lake map area (Figure 3). Major faults mark the northern limit at Spencer Creek. South of Rancheria River, a broad area of Sylvester and McDame group rocks is thought to represent the same mineralized units as at the Midway and Marbaco properties.

### MINERAL DEPOSITS IN THE AREA

The most significant development in mineral exploration in the southern Yukon and northern B. C. within the last few years has been the discovery of stratiform silver-lead-zinc mineralization within "exhalite" massive sulphide and silica/barite horizons in the lower portion of the Mississippian-Devonian Sylvester group.

The discovery, by Regional Resources Ltd. and partners Amax of Canada and Procan Exploration Ltd. has resulted in an extensive staking program and re-evaluation of geological data concerning mineral showings adjacent to the "Midway" property.

Several other silver-lead-zinc deposits not as yet of economic size or grade, occur in close proximity, in Cambrian to Middle Devonian strata, and also in high grade veins within the Cassiar Batholith. Several of these deposits are described briefly, following a description of the Midway property.

Vein mineralization occurring at the Silver Tip showing is discussed under a separate heading.

#### Midway Deposit:

The "Midway" deposit, staked by Regional Resources in 1980 and drilled in 1981 and 1982 was discovered as a result of careful exploration of the previously explored Silverknife (Silver Tip) silver-lead-zinc showing, following investigation of strongly anomalous silt sample results in the 1980 regional geochemical survey.

Six drill holes in 1981, totalling 853 meters indicated the presence of 3 mineralized zones dipping southeasterly at about 30 degrees. The lowermost zone observed only in drill core overlies the McDame limestone and varies from 1 to 1.5 meters thick and contains from 2.65 to 23.39% combined lead-zinc and from 1.25 to 22.59 oz/ton silver. This zone is locally absent and may grade laterally into siliceous, pyritic, exhalite. Four of the 6 holes encountered a "dry cavernous opening 15 cm to 150 cm wide" near the McDame-Sylvester contact.

The lower zone consists of weakly bedded to brecciated pyrite, galena, sphalerite and carbonate fragments in an argillaceous matrix.

The middle, or "Discovery" zone, found in outcrop, occurs about 70 meters stratigraphically above the lower zone, within argillite and sandstones.

This zone varies for 0.5m to 11.2 meters in thickness and ranges in grade from 4.56 to 13.36 percent combined Pb-Zn and 1.26 to 5.03 oz/ton silver.

The Upper Zone is about 10 - 20 meters above the Discovery zone, ranges in thickness from 0.40m to 3.17m in thickness and has combined lead-zinc grades ranging from 2.62% to 13.15% and silver grades.

Drilling of 18 additional holes in 1982 has proven 2.78 million tonnes (3.05 M. tons) averaging 13.3 oz/tonne silver, 12% zinc and 6.1% lead with minor but possibly economic quantities of tin, bismuth, gold and copper. (Richardson, Greenshields, Canada Ltd. - research report). Composite samples from core from 8 holes averaged 0.023 oz/ton gold, 0.35% copper, and 0.14% tin. The deposit is now known to exist over an area 2,000 feet (600m) square through a geological section of 100 ft. (30m). Definition of the deposit is not complete.

The exhalite horizons can be traced for at least 14 km along strike on the southwest part of the property and similar horizons are seen 10 km to the northeast. On the northeast side of the property a barite exhalite 4 m-thick has been traced for 5 km in float and outcrop.

The mineralized horizons are believed to represent sulfide rich exhalations deposited on the floor of a rift-controlled basin up to 14 km wide (Hylands, 1981).

The showings respond well to standard geochemical soil and silt sampling techniques; the Discovery showing has a broad coincident Pb-Zn-Ag-Ba anomaly, and seven additional areas have coincident Pb-Zn-Ag anomalies. Airborne EM and magnetometer surveys were flown and ground EM and gravity surveys were done. Two pulse EM anomalies and one vector EM anomaly were verified by drilling.

An idealized stratigraphic section prepared by D. G. McIntyre from company plans is reproduced in Figure 3A and a stratigraphic section used by J. Hylands for the Midway property is reproduced in Figure 4.

#### Amy (Fosco) Showings:

The Amy deposit is situated approximately two miles north west of the north end of Tootsee Lake. The showings were discovered in 1948 and staked by Hudson Bay Exploration as the Gem Group. In 1949, 8 diamond drill holes were completed totalling 2935 feet, and seven deep trenches traced the mineralized zone for 550 feet with maximum width 7 feet in DDH - 2. The mineralization, galena, tetrahedrite, sphalerite, pyrrhotite and ankerite occurs as a replacement zone in limestone along a limestone-argillite contact and near the surface trace of the granite contact. The zone occupies a shear zone striking north 55-65 degrees west and dipping 60 degrees southwest.

Further work on the property in 1964 by Rancheria Mining Company consisted of soil surveys, magnetometer surveys and underground development.

In the underground workings, the vein in a 66 foot section averaged 5.9 feet wide and assayed 27.4 oz/ton silver, 7.5% zinc and 7.5% lead. Further drifting along the vein in 1965 disclosed a vein length of at least 419 feet. Additional bulldozer trenching on other geochemical anomalies disclosed other veins. Diamond drilling to test continuity consisted of 24 holes totalling 7500 feet.

130°30'

104 O/16

Yukon 130°00' 60°00'

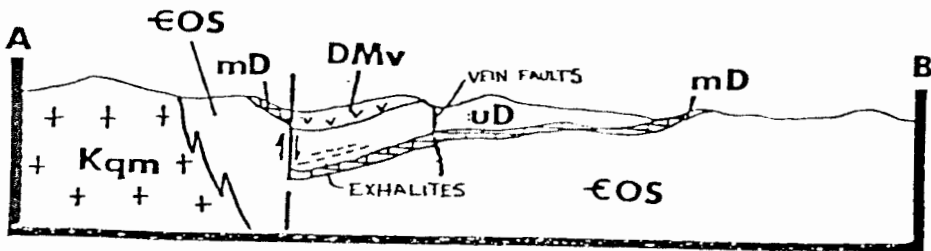
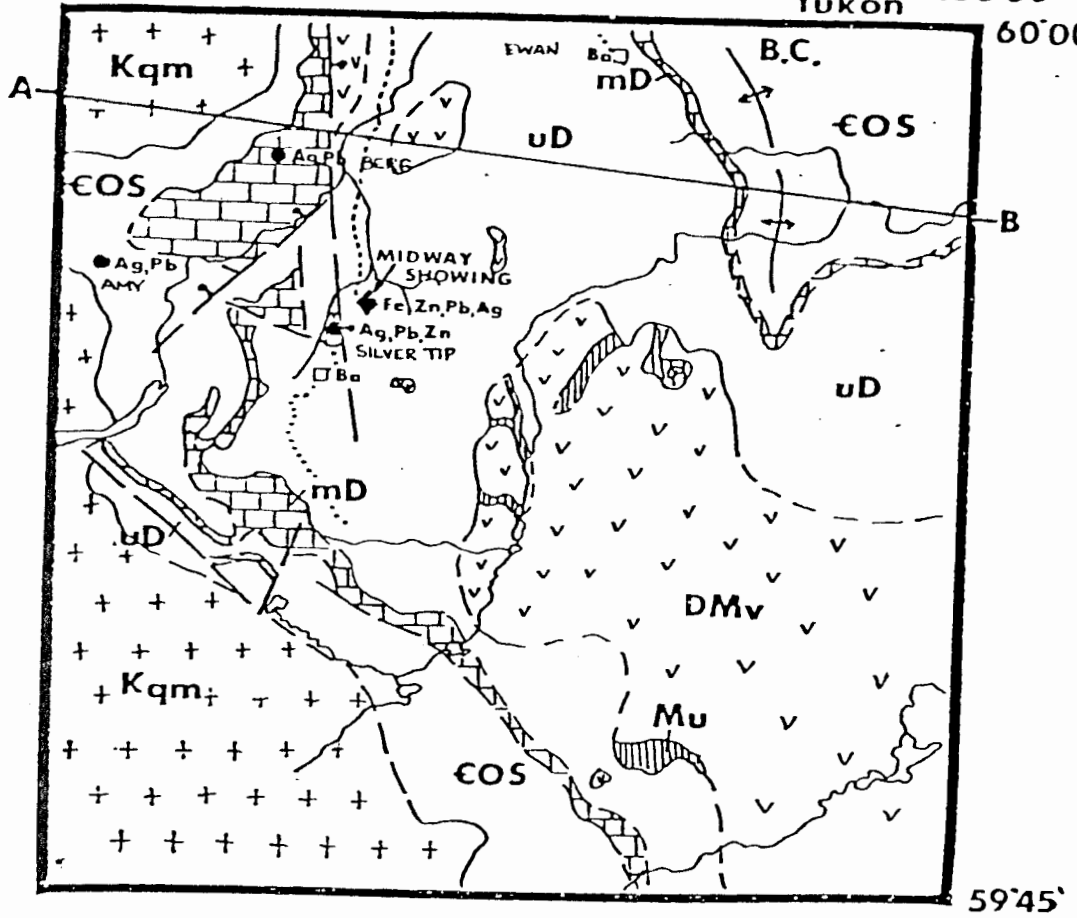


Figure 3a. Generalized geology in vicinity of the Midway showing, Jennings River map-area; geology and legend modified from Gabrielse (1969).

(Source, McIntyre, D.G, 1982. BCDM Paper 82-1)

TABLE II.  
Legend for Figure 3a.

CRETACEOUS

CASSIAR BATHOLITH

Kqm Quartz monzonite, granodiorite

MISSISSIPPIAN AND LATER

Mu Serpentinite, dunite, peridotite

UPPER DEVONIAN TO MISSISSIPPIAN

SYLVESTER GROUP (UPPER)

DMv Greenstone, agglomerate; dacitic tuff; minor chert, metadiorite

MIDDLE TO UPPER DEVONIAN

SYLVESTER GROUP (LOWER)

uD Slate, argillite, chert, siltstone, chert-arenite, greywacke, chert pebble conglomerate, minor limestone

MIDDLE DEVONIAN




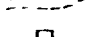




McDAME GROUP

mD Dolomite, fossiliferous limestone

CAMBRIAN, ORDOVICIAN, AND SILURIAN

EOS Dolomite, dolomitic sandstone and siltstone, graptolitic black shale, platy siltstone, calcareous phyllite, phyllitic limestone skarn, hornfels, limestone, quartzite

Symbols

High-angle fault; ball on downthrown block .....	
Antiform .....	
Contact: defined; assumed .....	
Road .....	
Stratabound barite .....	
Stratabound massive sulphide .....	
Mineral occurrence in carbonate rocks .....	
Exhalite horizon .....	



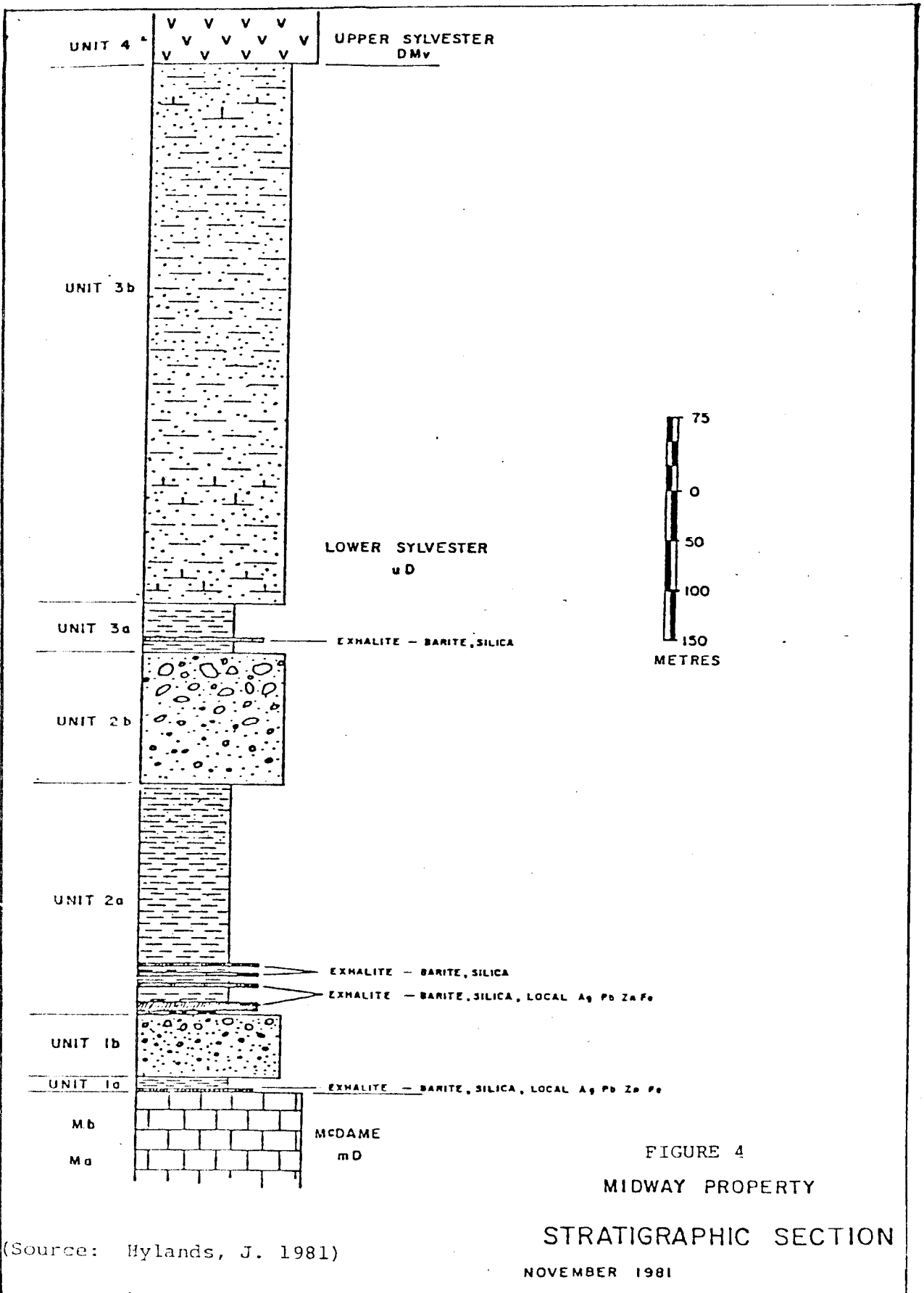


FIGURE 4  
MIDWAY PROPERTY

STRATIGRAPHIC SECTION

(Source: Hylands, J. 1981)

NOVEMBER 1981

The claims lapsed in 1969 and in 1970 the property was restaked by Fosco Mining Limited. Further underground work and drilling was done and a feasibility study was done by Dolmage, Campbell and Associates, who concluded that the deposit contained the following tonnages (diluted):

<u>Category</u>	<u>Tons</u>	<u>Ag(oz/t)</u>	<u>Pb%</u>	<u>Zn%</u>
Measured	11,400	17.10	3.74	6.26
Drill indicated	31,100	6.31	1.78	6.80
Geologically inferred	<u>68,400</u>	no grade assigned		
TOTAL:	<u><u>110,900</u></u>			

The consultants further stated that "A comparison between the grade of drill intercepts near the underground workings and assays from channel samples taken from the drift suggests that the estimated grade in the drill indicated category is probably low by an unknown but significant amount. The reserve estimate outlined in this report should not be considered as limiting the ultimate potential of the deposit".

Bench scale mill tests produced a concentrate acceptable to custom smelters. A detailed underground exploration program was recommended, but immediate production was not recommended at that time because of the weak price for silver (\$1.29 to \$2.57 per ounce).

In 1973, additional surface work was done, confirming sampling completed on the 4450 level, and a 1400 foot crosscut and 220 feet of drifting done on the 4200 feet level.

A second estimate of ore reserves was done by Chapman Wood and Griswold in 1974, who concluded that total ore reserves now were + 140000 tons as follows:

<u>Category</u>	<u>Tons</u>	<u>Grade Ag(oz/t)</u>	<u>Pb%</u>	<u>Zn%</u>
Measured	18,122	13.88	3.27	7.29
Drill indicated	<u>61,727</u>	<u>9.76</u>	<u>2.70</u>	<u>5.63</u>
Total	79,849	10.70	2.84	6.03
Inferred	<u>59,326</u>	no grade assigned		
TOTAL:	<u><u>140,000</u></u>			

The claims were acquired by Marbaco Mines Ltd. in 1980 along with adjacent claims owned by D. Schellenberg. Marbaco performed geochemical surveys and trenching which indicated additional zones could be present.

At present metal prices (\$15/oz Ag, 28¢/lb Pb, 49¢/lb Zn), gross metal value per ton of ore (1974 reserve data) is \$235.50. (The estimated grade of drill indicated reserves is probably still low compared with measured reserves, as in the 1971 calculations). Few recent assay exist for gold but several samples taken from 1949 to 1967 contain 0.01 to 0.02 oz/ton.

Prospects are considered encouraging for discovery of additional mineralized zones at this property.

Some similarities exist between the Amy deposit and the lower most "exhalite" zone at the Midway deposit:

- 1) Both deposits occur near limestone - phyllite contacts.
- 2) Solution caves are found adjacent to both deposits.
- 3) Mineralogy and reserve grades are similar.
- 4) Mineralization is parallel with bedding in both deposits.

The Amy deposit is described in most reports as a strike fault system with characteristics of quartz-siderite-sulphide replacement of limestone in a Shear zone. However, the possibility exists that the deposit represents a remobilized stratiform exhalite deposit, with potential for augmentation of reserves along strike and dip.

#### Silver Tip Showing (Midway Property)

The Silver Tip showing, a vein or replacement deposit, is situated three miles northeast of Tootsee Lake. Extensive work was done on the property from 1956 to 1968 by several large companies including Conwest, Canex, Noranda, Bralorne Mines

and Peerless Oil and Gas. It now forms part of the Midway property of Regional Resources and partners.

The area is underlain by thick-bedded McDame limestone of Devonian age, overlain by Mississippian-Devonian Sylvester Group phyllites. Gossan zones and galena float are found in several zones trending north-easterly. The largest gossan zone, No. 2, ranges from 15 to 65 feet wide and is 700 feet long and was reported to average 5.7 oz/ton silver, 6.2% lead and 2.9% zinc. Individual pieces of galena from the zone assay about 150 oz/ton silver and 70% lead (BCMM Ann. Report 1968, p. 25-33). The same zone intersected in several drill holes consisted of "frozen mineralized gossan". No. 4 zone, intersected in the upper adit was sampled over 38 feet by taking muck from 175 cars, the average was 13.84 oz/ton silver, and 15.4% lead. The average of the channel samples along 40 feet in the west drift was over five feet, 0.02 oz/ton gold, 12.0 oz/ton silver, and 14.5% lead. The same zone, intersected in the lower adit, approximately 650 feet down the dip of the fault zone, is almost completely oxidized and resembles "soft brown sugar". This almost completely leached material assays 0.2 oz/ton silver, 0.1% lead and 4.5% zinc.

Mineralized zones such as the above are localized on strong faults and fractures in the McDame limestone, along the crest of an anticline and appear to be almost completely oxidized to depths exceeding 600 feet from the surface. Apart from the gossan zones, considerable pyrite with minor sphalerite and galena occurs in the holes drilled in the phyllite, (presumably Sylvester Group), and minor galena and sphalerite occur in quartz and calcite veins and in limestone. To the writer's knowledge, fresh vein material from which the gossans resulted has not been seen on the property.

This vein-replacement deposit, as yet untested by Regional Resources has strong similarities to the Amy deposit of Marbaco Resources. Mineralogy and grades are similar and probably origin by replacement along fault zones in limy horizons seems almost certain. Considering the presence of mineralization over a vertical range of over 650 feet and 5 foot mining width, the eventual development of economic reserves on this portion of the property seems certain.

**YP Property:**

The YP property, adjacent to the Flo and Lydia claims, situated 4 km south of mile 701 on the Alaska Highway, owned by Flame Petro Minerals Ltd. and currently being explored by Butler Mountain Resources Ltd., has several oxidized vein or replacement zones in limestone of unknown, but probable Cambrian age. Some solid galena was hand-cobbed and shipped from the property in the 1960's. Several large gossan zones, with residual argentiferous galena, are thought to represent oxidized replacement zones of galena-tetrahedrite-sphalerite and other sulphides in siderite gangue, comparable with zones present on the Silver Tip showing of the Midway property. Geochemical surveys, geologic mapping, trenching and drilling were recommended by B.J. Price in 1980. The property was reviewed in 1982 by Glen E. White, P.Eng., who suggested pulse EM surveys in addition to geology and geochemistry, with a 2-stage program with \$40,000 expenditure in Stage I and \$110,000 in Stage II (drilling).

The program is expected to proceed in 1983.

**A + B Claims:**

The A + B deposit, is situated 6 km north of the Alaska Highway, is owned by Delphi Resources Ltd. and was explored by SEREM Ltd. Strongly folded limestone and phyllites of Cambrian or Devonian age are host to stratiform massive zinc-lead-silver zones, highly irregular in shape. The best intersection to date has been in hole 3 (1962) drilled by Scurry Rainbow Oils Ltd.: 39 feet of 1.66 oz/ton silver, 1.47% lead and 8.32% zinc. Cross cutting quartz calcite veins have significant scheelite content.

**Sue Claims:**

The Sue claims, 5 km south of the Lydia claims, were originally explored by Dupont of Canada Exploration as the JCS 1 and 2 claims. Although most attention was paid to molybdenum/tungsten mineralization at the contact of the Cassiar batholith with skarnified Kechika Group rocks, lead-zinc-silver mineralization was noted in a quartzite breccia. The breccia is briefly described by Eccles (1980) as a possible pipe. One sample from the breccia assayed over 10 oz/ton silver.

**Noranda Claims:**

Silver-lead-zinc mineralization is also present on the Root, Toot, Boot, Loot and Road claims, north and west of Tootsee River. Mineralization is present in quartz veins within the Cassiar batholith, but is also present in carbonate breccias. Strong lead-zinc geochemical anomalies may be associated with lamprophyric dykes, a relationship also seen on the Ag claims.

**Freer Creek Areas:**

Numerous silver-lead-zinc veins occur near Freer Creek, approximately 10 km west of the Flo and Lydia claims. On the Luck prospect, between 3500 and 4000 feet elevation on the Creek, argentiferous galena, sphalerite and chalcopyrite are found in quartz veins in the Cassiar batholith quartz monzonite. The veins are associated with a lamprophyre dyke, and are outlined by EM-16 surveys and geochemical soil sampling. Hand cobbled material was shipped from one of the occurrences on the IDA property in 1970. A 25 ton shipment assayed 80 oz/ton silver, 56% lead, 5% zinc and 0.6% copper (Report by D. Parent, 1973).

The veins are presently being explored by Klondyke Silver Mines Ltd. based in Whitehorse, Yukon Territories, who plan to start an exploration and development program, early in 1983. (Whitehorse Star, January 4, 1983).

**Bear and Ag Claims:**

The Bear claims were staked by Douglas Schellenberg in 1978 and explored by Dupont Exploration in 1979. The Ag 1 and 2 claims were also staked by Schellenberg, in 1982. The claims are situated 2 km west of the Marbaco silver-lead-zinc deposit and are surrounded by the Fly Claims.

The only record of work done on the Bear and Ag claims is contained in an unpublished report by K.L. Eccles in 1979. Work done by Dupont included line cutting from three well-cut baselines, geological mapping, trenching and soil sampling. A total of 585 samples were collected and analyzed for molybdenum, tungsten, lead, zinc and silver. The samples outlined several molybdenum-tungsten targets and one main lead-zinc-

silver anomaly. Trenching of Mo-W anomalies revealed 2 stratiform skarn bodies up to 1 meter wide and 10 meters apart. Although mineralized with scheelite, molybdenite, powellite and galena, the showings are considered uneconomic.

Trenching in the Pb-Zn-Ag anomaly revealed a narrow high-grade vein in limestone mineralized with galena, sphalerite and ruby silver (pyrargyrite), spatially associated with a dark green, possibly lamprophyric dyke. Assays from its occurrence (selected) are as follows:

<u>No.</u>	<u>Pb%</u>	<u>Zn%</u>	<u>Ag (oz/ton)</u>
2080	0.53	27.50	3.81
2081	56	3.18	28.00
2082	19.95	7.15	11.30

Schellenberg (1983 - personal communication) suggests that the mineralization may be stratiform and may extend outward from the Ag claims into the Fly claims.

#### DISCUSSION OF THE RUN CLAIM

The Run Claims are underlain by grey-buff dolomite and dolomitic shale, limestone and sandstone of Unit 5; grey and black dolomitic rocks of Unit 6; and argillite, sandstone, conglomerate and chert of Unit 7b (Figure 3 from Poole et al., Map 10 - 1060). A Silurian or Devonian age has been assigned to Unit 5 and Unit 6 and a Devonian or Mississippian age has been assigned to Unit 7b which correlates with the Sylvester Group rocks that host the Midway deposits in the Jennings River Map-Area (Gabielse et al., Map 18 - 1966). A major northeast striking fault, shown on Map 10 - 1960 bisects the claim area, and a major northwest fault structure passes just east of the claims. The presence of strong fault structures needed to channel mineral bearing solutions is an encouraging feature. The Geological Survey of Canada mapping of the Run Claim Area needs refining for detailed property work, but does indicate a similar geological setting to the nearby Midway deposit.

The writer has not field examined the Run Claim area, but has worked on several silver-lead-zinc-barite deposits in Northern British Columbia and the Yukon Territory. Stratabound deposits tend to occur in clusters (e.g. Anvil Camp; MacMillan Pass; Howards Pass; Akie River Area) with higher silver values generally found in deposits

hosted by Devonian rocks (e.g., Tom, Jason, Cirque and Midway deposits). Search for a base metal deposit on the Run Claims is warranted because of the proximity of the Midway deposit, a stratabound deposit with high silver values in a sedimentary sequence of Devonian age.

Exploration of the Run Claim area should start with careful prospecting and geological mapping. Geological mapping should be evaluated before locating geochemical survey lines. The following key factors should be recorded:

- 1) A characteristic porous or pumice-like rock of grey or white colour that results from carbonate or sulphide leaching from baritic outcrops;
- 2) Vegetative kill zones associated with baritic horizons;
- 3) Minor galena (anomalous lead) occurs in siliceous or baritic exhalite deposits marginal to stratiform base metal deposits;
- 4) Faults that control mineralization are revealed by:
  - a) section thickening,
  - b) siliceous-pyritic zones, and
  - c) intraformational breccias, conglomerates and turbidites.

Silt, soil and rock samples should be analysed for lead, zinc, copper, silver and barium. Lead is generally the best indicator for stratabound deposits but the other elements may help by defining zoning. Silver may indicate a precious metal deposit with low base metal content.

### CONCLUSIONS AND RECOMMENDATIONS

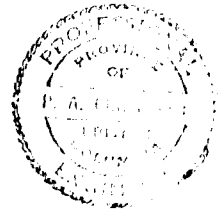
Considering the proximity of the Run Claims to the exciting new "Midway" silver-lead-zinc-barite discoveries, and the similar geological settings, a basic (Stage I and Stage II) exploration programs of mapping, prospecting, geophysics and soil, silt and rock geochemistry are highly recommended. If the initial programs are successful in locating mineralization or strong geochemical or geophysical anomalies, then a follow-up (Stage III) diamond drilling program will be warranted. If broad or poorly defined



anomalies result from Stage I or Stage II, then a Stage III trenching or percussion drilling program should be considered.

Geological mapping should be conducted at a base map scale of 1:5,000 with more detailed grid mapping as required. Soil samples should be collected at 25 metre intervals along lines as normal to geological strike as possible. Rock, silt and soil samples should be analysed for Cu, Pb, Zn, Ag and Ba. The typical zoning pattern from an iron rich core to zinc-copper to lead-zinc to silver-lead and marginal barite, should be considered when evaluating geochemical data. Electromagnetic and magnetic data should be collected along all soil lines for comparison of survey results.

A budget of \$23,000 is estimated to be required for the Stage I program of prospecting, geological mapping and geochemistry. A Stage II geochemical and geophysical program is estimated to cost \$34,000. If the Stage I and Stage II programs are successful, then a budget of \$100,000 is estimated for a Stage III, 400 metre diamond drill test.



*Peter A. Christopher*  
Peter A. Christopher, P.Eng., Ph.D.  
April 22, 1983

COST ESTIMATES

**Stage I: Prospecting, Geological, Geochemical**

Personnel

Geologist/Manager	10 days @ \$300 each	\$ 3,000
Assistant/Prospector	10 days @ \$150 each	1,500
Sampler/Helper	10 days @ \$100 each	1,000

Transportation

Truck	10 days @ \$100 each	1,000
Mobilization/demob		1,500
Helicopter	12 hours @ \$500	6,000

<u>Room and Board</u>	30 man days @ \$40 each	1,200
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Geochemistry

200 soil, silt or rock geochem. samples	@ \$12 each	2,400
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<u>Base Map Preparation</u>		200
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<u>Camp Material and Field Supplies</u>		1,500
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<u>Report Preparation</u>		<u>1,500</u>
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\$20,800

Contingency	<u>2,200</u>
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Stage I Total	<u><u>\$23,000</u></u>
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**Stage II: Geochemical and Geophysical**

Personnel

Manager	10 days @ \$200 each	\$ 2,000
Assistant	10 days @ \$150 each	1,500
Helper	10 days @ \$100 each	1,000
Geophysical Crew*	10 days @ \$800 each	8,000

\* includes E.M. and Magnetometer Rental and reporting about 20 km survey.

Transportation

Truck	10 days @ \$100 each	1,000
Mobilization/demob		2,000
Helicopter	12 hours @ \$500	6,000

<u>Room and Board</u>	50 man days @ \$40 each	2,000
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Geochemistry

200 soil samples	@ \$12 each	2,400
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<u>Field and Camp Supplies</u>		3,000
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<u>Report Preparation</u>		<u>1,500</u>
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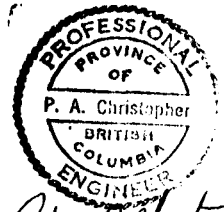
\$30,400

Contingency	<u>3,600</u>
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Stage II Total	<u><u>\$34,000</u></u>
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**Stage III: Drilling**

Helicopter	20 hours @ \$500 each	\$ 10,000
Diamond Drilling	400 meters @ \$190 each	76,000
All inclusive: drilling, engineering, geochem., etc.		<hr/>
		\$ 86,000
	Contingency	<hr/> 14,000
	<b>Stage III Total</b>	<b><hr/><hr/>\$100,000</b>



*Peter A. Christopher*

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