MAR 19740002: SOUTHWESTERN ALBERTA

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KINTLA EXPLORATIONS LIMITED

Geological Report # S - P 1 *

1973

Permit Area 176,
Southwestern Alberta.

E. Goble
April 15, 1974.

* Scarpe - Permit 1

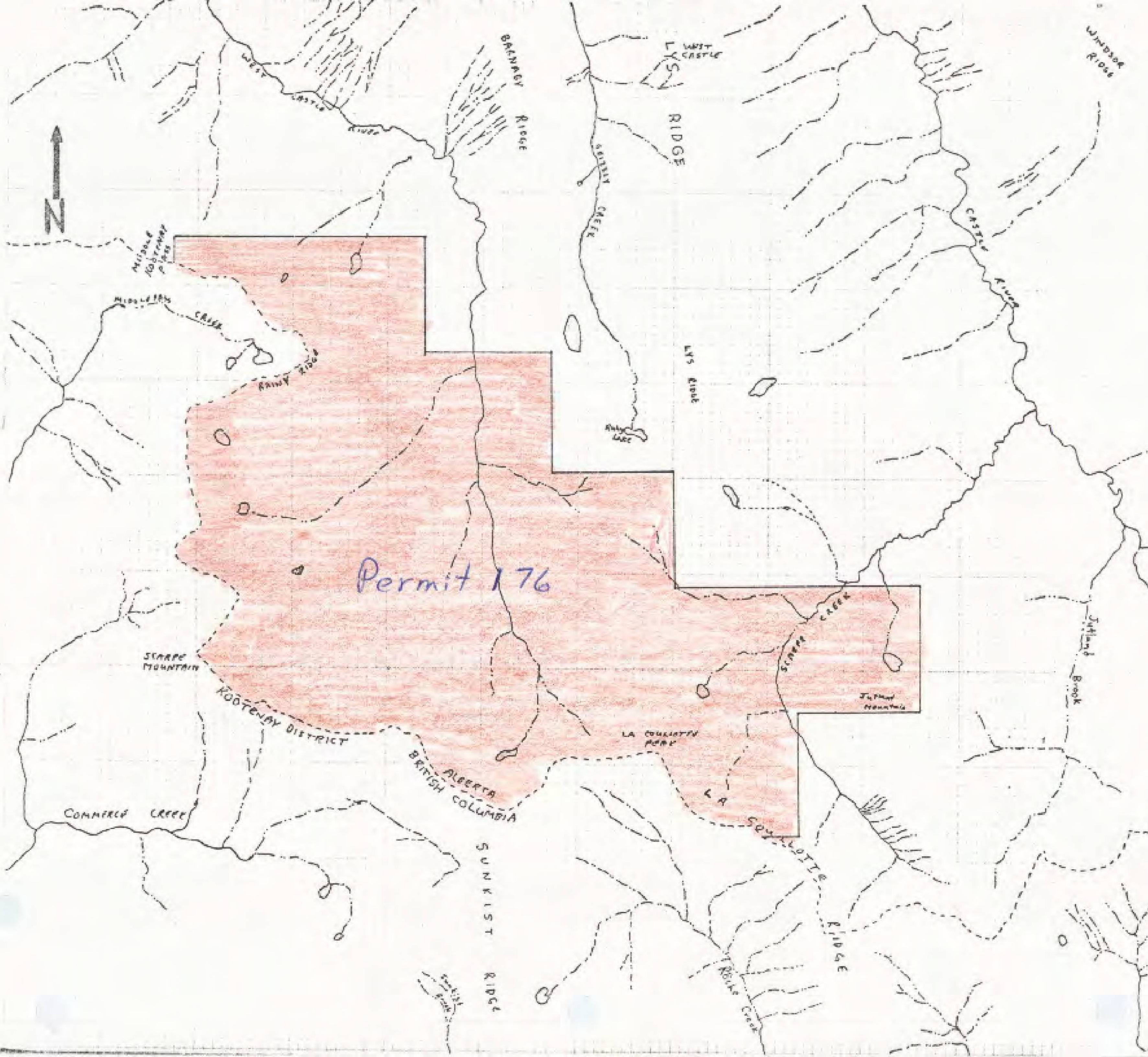
INTRODUCTION

Prospecting permit area # 176 consists of 9,920 acres, more or less centered upon latitude 49° 13' N and longitude 114° 21' W. The permit area lies adjacent to the British Columbia - Alberta boundary at the headwaters of the West Castle River in the Crowsnest Forest Reserve. It covers exposures of the Grinnell, Siyeh, Purcell Lava, Sheppard, Gateway, and Phillips Formations, and the lower portion of the Roosville Formation, (of the Precambrian Belt Series) in the Akamina Syncline. The permit was taken out by Kintla Explorations Limited in the early spring of 1973, following the return of excellent gold values in syenitic and dioritic intrusives from Kintla's Commerce Mountain property immediately south of the permit area (in B.C.). A prospecting program was undertaken on the permit with a view towards expanding the program to include mapping and drilling the property if results warranted it. This is a summary of that program.

REGIONAL SETTING

Prospecting Permit # 176 is situated within the Clarke Range of the Rocky Mountains some 15 miles north of the Canada - United States border. The permit area is bounded by latitudes 49° 11' N and 49° 16' N and by longitudes 114° 16' W and 114° 24' W, covering a total of 9,920 acres adjacent to the Alberta - British Columbia border.

The permit area is situated in mountainous terrain typical of the Lewis Range of the southern Canadian Rockies. Relief in the area is rugged, with valley bottoms between 5000 and 6000 feet above sea-level, and mountain peaks between 7500 and 9000 feet above sea-level. Access is good via a forestry road along West Castle River to the center of the permit area, but all other portions of the area can be reached



N
WEST CASTLE RIVER
BARNABY RIDGE
LYS RIDGE
WEST CASTLE
WINDSOR RIDGE
GRIZZLY CREEK
CASTLE RIVER
MIDDLE KOOTENAY PASS
MIDDLEPASS CREEK
RAINY RIDGE
LYS RIDGE
RUBY LAKE
Permit 176
SCARPE CREEK
SCARPE MOUNTAIN
JUTLAND MOUNTAIN
Jutland Brook
KOOTENAY DISTRICT
LA COULOTTE PEAK
ALBERTA
BRITISH COLUMBIA
LA COULOTTE RIDGE
COMMERCE CREEK
SUNKIST RIDGE

only on foot. Winter access is restricted by annual snowfalls of 80 to 90 inches, but ridge tops and the southern faces of the mountains are generally open all year.

REGIONAL GEOLOGY

The permit area is situated within a region underlain by Precambrian rocks of the Lewis Series. The stratigraphic succession of the area is given in Table 1 (after Price, 1962). The area of the permit is for the most part underlain by quartzites, argillites, and carbonate horizons, with minor intercalated sub-marine lavas. The Grinnell, Siyeh, Purcell Lava, Sheppard, Gateway, Phillips, and Roosville Formations outcrop on the permit areas.

Reesor (1957), Price (1964), and Harrison (1972) postulate that the Lewis Series of sediments, of which these are a part, were deposited in the shallow waters of a deltaic basin and were in part of sub-aerial origin. Smith and Barnes (1966) recognize cyclic deep-shallow water depositional phases in the Montana equivalents of the Lewis Series. One such cycle terminates at the base of the Siyeh Formation. The next cycle begins at the base of the Siyeh Formation with marcasitic shales, continues through the carbonate sequence of the central and upper Siyeh, and terminates after the upper red beds of the Sheppard, Gateway, and Phillips Formations.

The Grinnell, Siyeh, and Sheppard Formations have been intruded by a series of amygdaloidal, porphyritic quartz-diorite sills and dykes up to 80 feet thick in the permit area. These are of Precambrian age and are probably contemporaneous with the extrusion of the Purcell lavas. The Siyeh, Purcell Lava, and Sheppard Formations on the permit area have been intruded by a series of porphyritic -

ERA	PERIOD OR EPOCH		GROUP FORMATION	LITHOLOGY	THICKNESS (feet)
			EROSIONAL UNCONFORMITY		
PRECAMBRIAN	PURCELL		MOYIE INTRUSIONS	Diorite sills and dykes	
	PURCELL (LEWIS)	GATEWAY KINTLA	ROOSVILLE FORMATION	Green argillite, siltstone, sandstone, stromatolitic dolomite	3500±
			PHILLIPS FORMATION	Red sandstone, siltstone, argillite	500- 700
			GATEWAY FORMATION (upper member)	Argillite, argillaceous siltstone, dolomite dolomitic sandstone, and argillite	1150-3000
			SHEPPARD FORMATION	Quartzitic & dolomitic sandstone, dolomite, oolitic dolomite, argillite, siltstone, pillowed andesite	150- 900
			EROSIONAL UNCONFORMITY IN PART		
			PURCELL LAVA	Chloritized andesite, & amygdaloidal andesite, pillowed andesite	00- 600
			SIYEH FORMATION	Limestone, dolomite, argillite & sandy limestone & dolomite, argillite, stromatolitic limestone	1130-3000
			GRINNELL FORMATION	Red argillite, sandstone & siltstone; white, green & red quartzite	350-1700
			APPEKUNNY FORMATION	Green argillite; white, grey & green quartzite; sandy argillaceous dolomite & dolomitic argillite; siltstone	1500-2000
			ALTYN FORMATION	Argillaceous limestone & dolomite; sandy dolomite, argillite, & stromatolitic dolomite	500-4000
			WATERTON FORMATION	Limestone & dolomite, argillite, & argillaceous dolomite	1500+

Table 1. Stratigraphic succession of SW Canadian Precambrian (after Price, 1962)

trachytic syenitic sills and dykes of which the age is still unknown. These intrusions were the main target of the prospecting program.

PREVIOUS HISTORY OF EXPLORATION

Copper mineralization in Purcell lavas and diabases of the North Kootenay Pass region in southwestern Alberta was first reported by Dawson in 1886. The region was prospected for gold in the 1870's and 1880's, but no mineralization was found until the oil discovery at Oil City, now in Waterton Lakes National Park, concentrated activity in that area. At that time (1901 - 1903), gold was discovered on the northwestern slope of Buchanan Ridge in Appekunny Formation quartzites. No development was done and when the oil boom collapsed, the claims were dropped. Gold was also discovered in the Appekunny Formation on the east side of Goat Haunt Mountain, now in Glacier National Park, Montana, at approximately this same time and was mined until the death of the owner.

During the first decade of the 20th century, small-scale mining operations were located on copper bearing diabase dykes on Blakiston Brook, Waterton Lakes National Park, and on a gold showing on Chief Mountain in Glacier National Park. Outcrops of cupriferous quartzites and diabase intrusions were found and staked in the Yarrow Creek area at this same time, but these claims were never recorded. In 1963, the first 10 Big Horn claims were staked on these occurrences by Frank and Erik Goble, and by 1966, 75 Big Horn claims and 40 other claims had been recorded in that area.

In 1966, Kennco Exploration (Western) Ltd. optioned the 75 Big Horn claims and during the 1967 field season carried

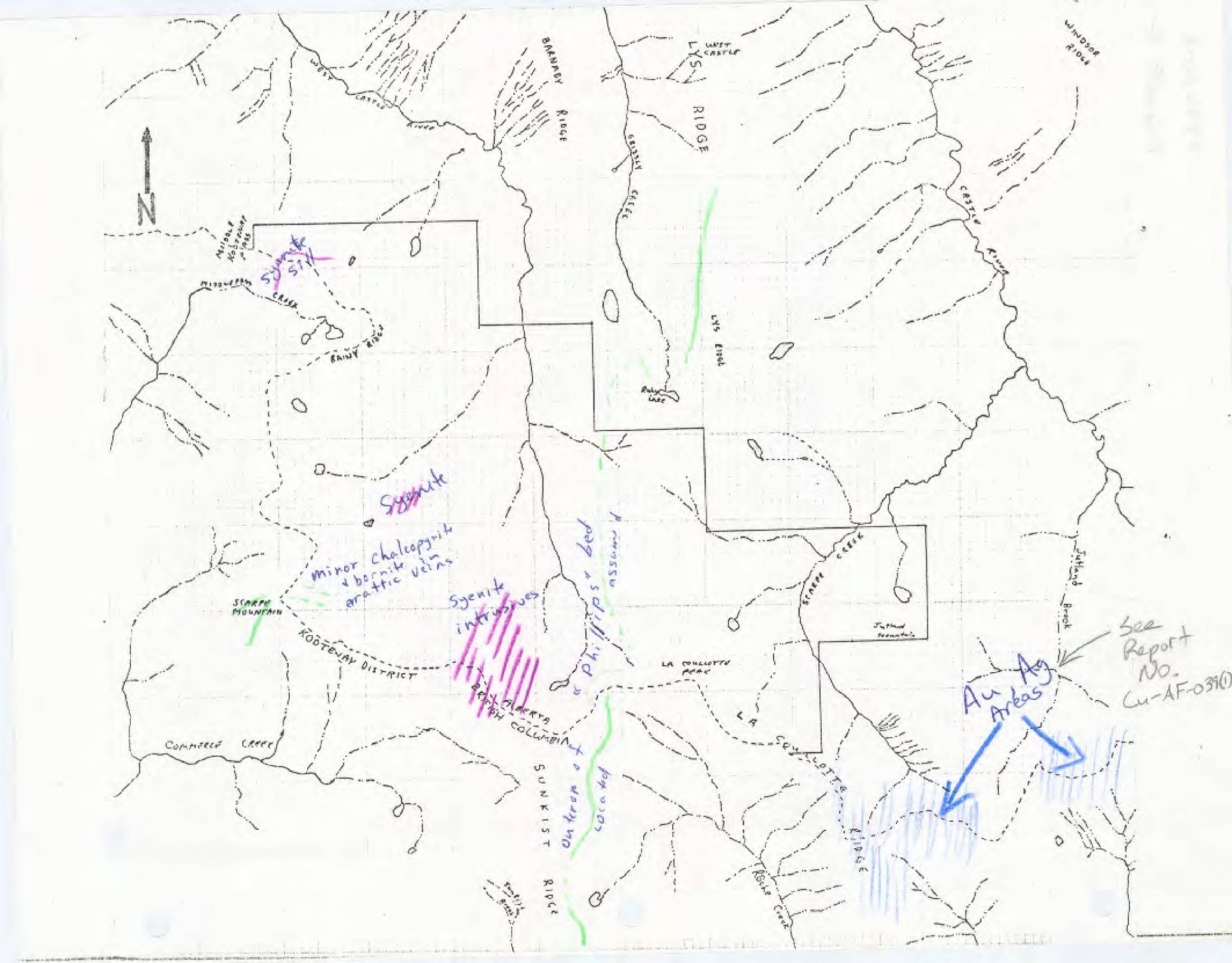
out an exploration program on them and on the remainder of the Belt series of southwestern Alberta and southeastern British Columbia. During this time Kennco located and staked the Commerce Mountain property, and this ground has been held continuously until the present when it is owned by Kintla Explorations Limited.

During the 1972 field season, Kintla located excellent gold values associated with diabase, diorite, and syenite intrusions in the Siyeh and Sheppard Formations on the Commerce Mountain claim block, and picked up contiguous ground to the north and northeast to the Alberta - British Columbia border. Prospecting Permit area # 176 is the contiguous extension of this ground into Alberta.

OUTLINE OF THE 1973 PROSPECTING PROGRAM

In July of 1973 a program of prospecting and sampling the permit areas was undertaken by Kintla. The immediate purpose of the program was to determine by means of a modest field program whether or not there was sufficient mineralization on the permit to warrant detailed mapping and diamond drilling. Unfortunately, no showings warranting further work were located, for although interesting mineralization was located, it occurred off Permit 176 to the southeast on ground held by someone else. This was located accidentally during a traverse from Jutland Mountain to Sage Creek. No traverses failed to locate mineralization (in the form of chalcopyrite and malachite), but this is so low in grade that it is completely uninteresting.

The extension of the "Phillips" bed of copper bearing siltstone could not be located along the portion of Lys Ridge covered by the permit, but it must be present on the permit as it has been located immediately south and north of the


N
Syenite
Syenite
minor chalcopyrite
bornite
erratic veins
Syenite intrusives
Au Ag Areas
See Report No. Cu-AF-0310
LYS RIDGE
BARNABY RIDGE
WEST CASTLE RIVER
CASTLE RIVER
CASTLE RIVER RIDGE
GRIZZLY CREEK
LYS LAKE
RUBY LAKE
RAINY RIDGE
MISSOURIAN CREEK
STARPE MOUNTAIN
KOOTENAY DISTRICT
BRITISH COLUMBIA
COMMERCE CREEK
SUNKIST RIDGE
LA COULOTTE PEAK
LA COULOTTE RIDGE
SCARPE CREEK
Jutland Mountain
Jutland Brook
TRIUNE CREEK

property (in both cases carrying from 0.7 to 1.1 % Cu). Unless this bed can be located exactly, it cannot be examined more fully, as any diamond drilling undertaken to test the bed would be wasted without more exact knowledge of the location of the mineralized bed.

RESULTS

Upon receipt of the excellent gold-silver assays from equivalent rocks approximately 1½ miles south of the permit area, it was decided to concentrate the prospecting on the Siyeh and Sheppard Formations, and more specifically, on syenite, diorite, and diabase intrusives within those formations. Later prospecting covered the other formations, and were concentrated on prospecting for copper.

Although intrusives apparently equivalent to those mineralized to the south were located, they were found to carry only traces of gold and silver, with the exception of a small syenite dyke cutting the Purcell Lava on the eastern ridge of Scarpe Mountain. In that location the syenite carried 0.01 oz Au, 0.15 oz Ag, 0.002 % Pb, 0.02 % Zn, and a trace of Cu. This represents approximately $2.00 worth of metals.

Much better showings of up to 0.04 oz Au per ton and up to 0.9 oz Ag per ton were found on traverse 7 along the continental divide southeast of Jutland Mountain. However, these showings are on ground already held under permit, and are not available for additional work. 1.37 g Au/t

The second phase of the prospecting program involved examining the Grinnell, Siyeh, and Phillips Formations for copper mineralization. Although every traverse located some mineralization, it was always in the form of chalcopyrite or as chalcopyrite-pyrite assemblage associated with malachite, and was always of very low grade (trace to 0.02 % Cu).

Additional work on these sediments is therefore not justified.

The most attractive target for future work on the area is the "Phillips" bed of copper bearing limey - siltstone. This bed was not located on the permit area but does run through it as it has been located both north and south of the permit area. It apparently crosses the permit area on the heavily wooded western side of Lys Ridge, and no outcrop was found.

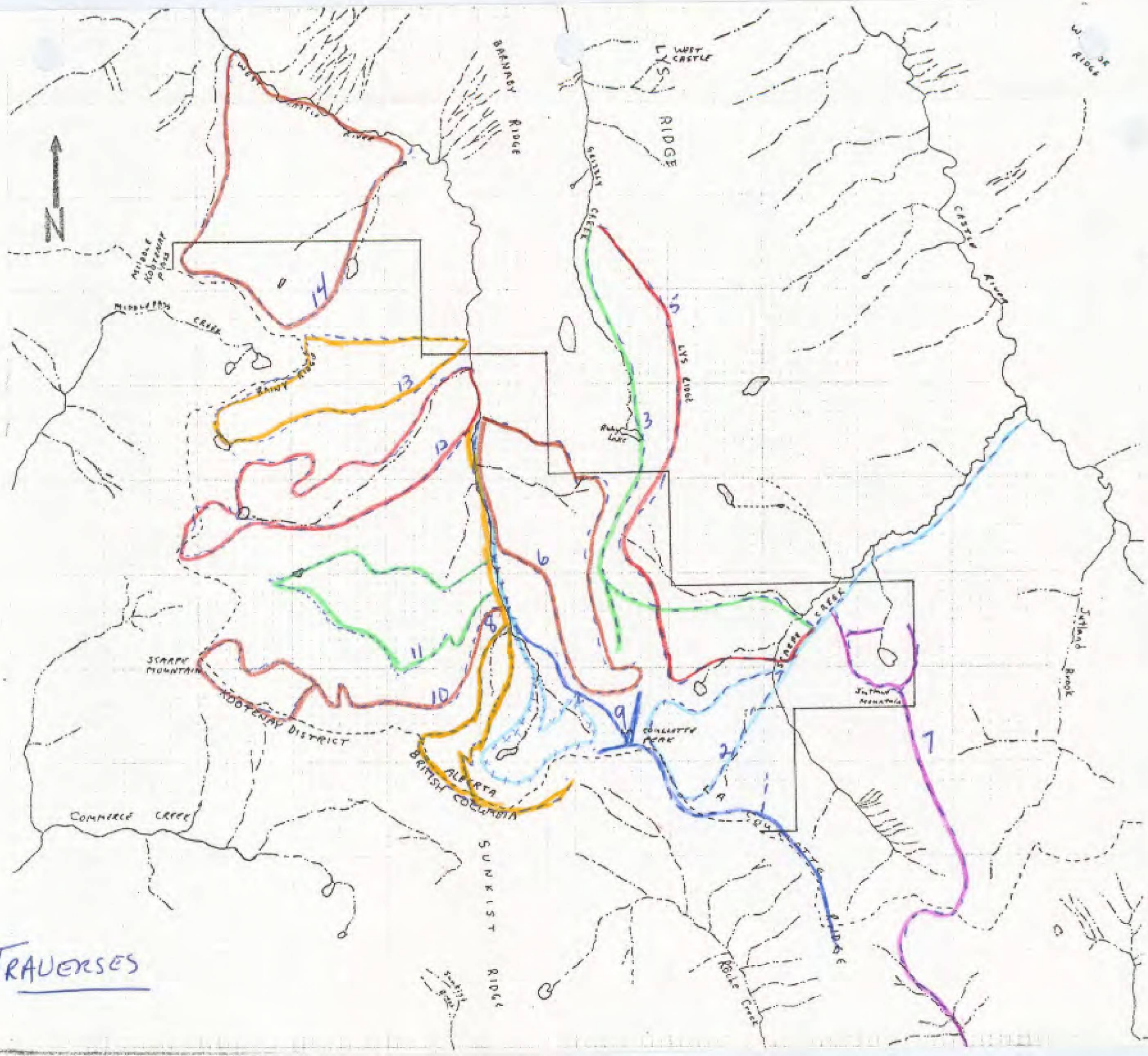
A summary of the traverses carried out in 1973 is as follows:

1. Head of West Castle River - 2 men
2. Scarpe Creek to La Coullotte Peak - 2 men
3. Scarpe Creek to Ruby Lake - 4 men
4. Scarpe Creek - 4 men
5. Scarpe Creek to Lys Ridge - 2 men
6. West Castle to Lys Ridge - 2 men
7. Scarpe Creek to Jutland Mountain to Sage Creek - 2 men
8. West Castle to Commerce Creek - 4 men
9. West Castle to La Coullotte Ridge - 4 men
10. West Castle to Scarpe Mountain Peak - 4 men
11. West Castle to Scarpe Mountain (east ridge) - 4 men
12. West Castle to Three Lakes Ridge - 4 men
13. West Castle to Three Lakes Ridge - 4 men
14. Middle Kootenay Pass - 4 men

44 man-days

These traverses are marked and numbered on the enclosed map, and involved personnel at the following rates of pay (26 working days per month):

Prospector	$1000/mo.	
Assistant	600/mo.	
	$1600/mo.	14 days - $861.53
Prospector	$1000/mo.	
Assistant	550/mo.	
	$1550/mo.	8 days - $476.92
Geological supervision:		
5 days @ $1500/mo.		- $288.46
Total		
49 man-days		- $1626.91



TRAVERSES

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FIGURE 3

Field Support:	
Cook's wages - 14 days @ $700/mo. -	$376.92
Food @ $3.50/day, 63 man-days -	220.50
Vehicle Rental -	
One 4-wheel drive @ $474/mo. -	255.76
One 2-wheel drive @ $375/mo. -	115.38
Total mileage - 1871 mi. @ 10¢ -	187.10
Assaying -	93.00
Field supplies -	35.00
Total -	$1283.66
Subtotal -	$2910.57
Administartion Costs (10%) -	291.05
Total -	$3201.62

QUARTZ MINERAL EXPLORATION PERMIT No. 176