

86-723-15326

Report of Initial Geological Survey  
on the CF Claim Group

Similkameen Mining Division  
British Columbia  
NTS 92H/7W  
49° 26.3' ~~30~~ N, 120° 49' W

for

Operator: Count Fleet Explorations Ltd.

Owner: J. RUZA

3 September 1986

by  
**GEOLOGICAL BRANCH**  
R. M. St. Louis M. Sc.  
**ASSESSMENT REPORT**

259 Skyline Ave.  
Tooele, Utah 84074

15,326

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## Table of Contents

1.	INTRODUCTION.....	1
1.1	GEOGRAPHY AND LOCATION.....	1
1.2	ACCESS.....	1
1.3	PROPERTY DEFINITION.....	3
1.4	PREVIOUS WORK.....	5
1.5	WORK DONE.....	5
2.	GEOLOGY.....	6
3.	RESULTS AND DISCUSSION.....	11
4.	CONCLUSIONS AND RECOMMENDATIONS.....	13
5.	REFERENCES CITED.....	14
6.	ITEMIZED COST STATEMENT.....	15
7.	CERTIFICATE.....	16

## List of Figures

1.	Location map.....	2
2.	Claim map.....	4
3.	Regional geology.....	7
4.	Geology of claims.....	in pocket

## List of Tables

1.	Descriptions of ultramafic lithologies exposed on the CF group.....	9
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## 1. INTRODUCTION

E. E. North of Count Fleet Explorations Ltd. requested the writer to geologically map, sample, and evaluate the CF claim group. The writer and one assistant were on the property July 24, 25, 27, 28, and 29, 1986, with E. E. North as guide on the 24th of July, 1986.

### 1.1 GEOGRAPHY AND LOCATION

The property is located approximately 13 km southwest of Coalmont, B.C., on the southeast flank of Lodestone Mountain (Figures 1 and 2). The area is best described as a dissected plateau on the eastern edge of the Cascade Mountains. Topographic relief is variable, with most of the claim area situated on moderately sloped ground. Newton Creek, a tributary of Granite Creek, traverses and essentially bisects the property. Near the eastern edge of the claims Newton Creek has developed a fairly steep canyon, but most of its course across the property is in a broad, gently sloped valley. This valley contains numerous swamps and muskegs. The northern half of the area claimed is heavily forested with spruce and fir, while the southern half is slightly more open, with some grassy patches. Due to heavy snowfalls in the area, the field season typically begins in mid to late June, and ends late in September.

### 1.2 ACCESS

Access to the property is provided by an old fire trail that crosses the property just north of the south claim line,

COUNT FLEET  
EXPLORATIONS LTD.

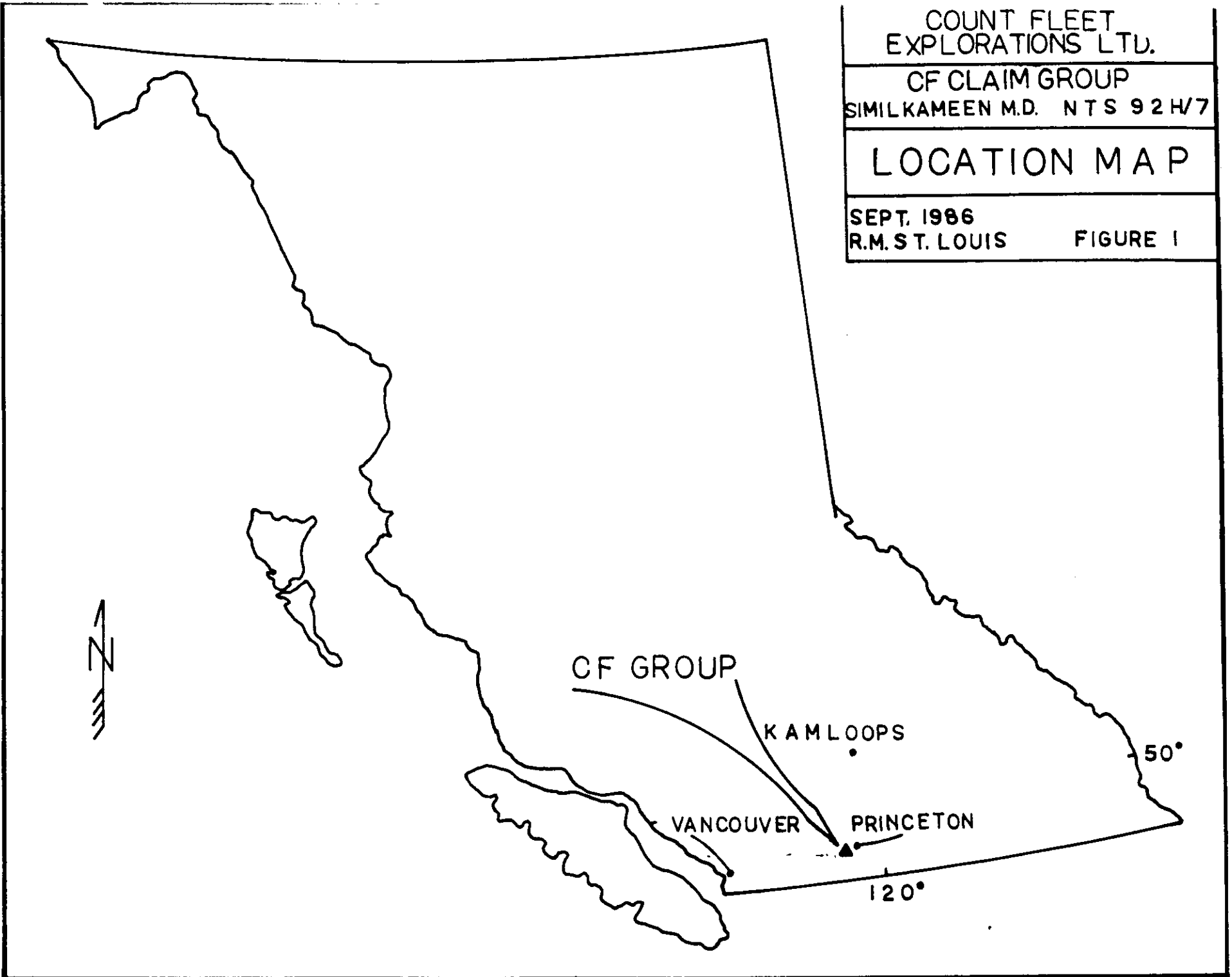
CF CLAIM GROUP  
SIMILKAMEEN M.D. NTS 92H/7

# LOCATION MAP

SEPT. 1986

R.M. ST. LOUIS

FIGURE 1



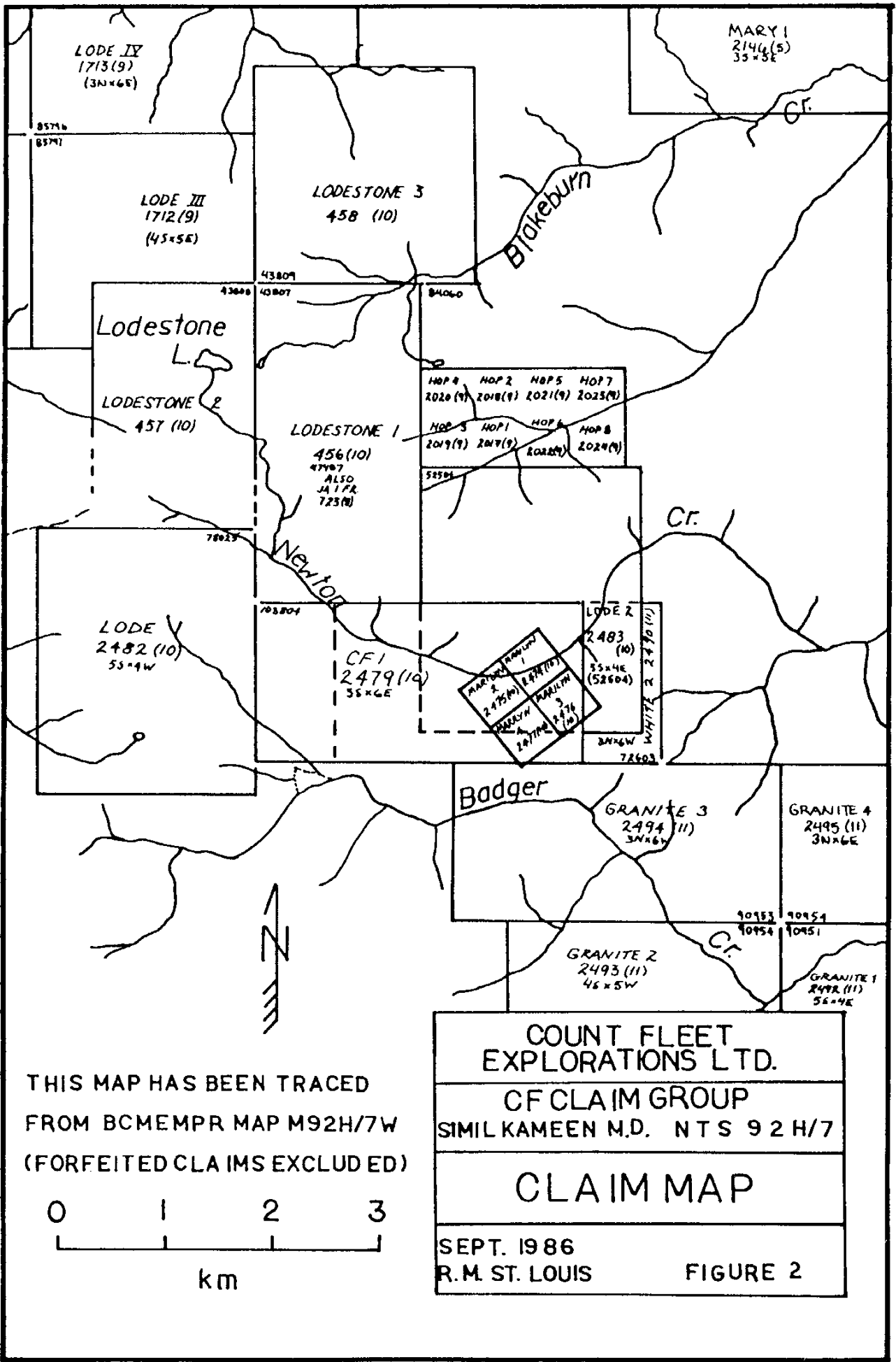
and by a new logging road that crosses the northern half of the claims. This new road connects with the Loadstone Lake Brigade Trail approximately 22 km northeast of the northeast corner of the property. Logging on the claims is expected to begin in the winter of 1986. It is felt that this logging will provide additional roads and outcrops on the CF group. Presently, outcrops are sparse, except along the new logging road, in the northern half of the property, and are slightly more common, though not abundant, in the southern half.

### 1.3 PROPERTY DEFINITION

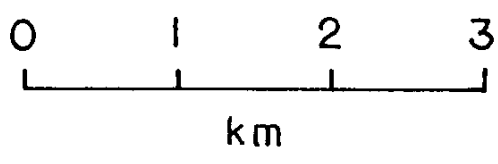
The CF group consists of 18 units, 6 east by 3 south. The record data for these claims is as follows:

Claim name: CF 1  
Record no.: 2479  
Record date: 21 October 1985  
Staked: 29 September 1985  
LCP No.: 103804  
Owner: Jaroslav Ruza

The original staking, as shown in Figure 2, was tied to the LCP of the Lodestone 1 and 2 groups to the north. However, the presence of large bodies of magnetite in the area makes the accurate use of a compass almost impossible. As a result, the position of the claims as shown in Figures 3 and 4 does not totally agree with that shown in Figure 2. The claim lines shown on Figure 4 were established by hip chain and compass, topography, and by relation to the two trenches that are just north of the south claim line. Nonetheless, the exact positions of the claim lines may differ from that shown on Figure 4, again owing to the difficulties imposed by the magnetite bodies. Only through an actual survey can



THIS MAP HAS BEEN TRACED  
 FROM BCMEMPR MAP M92H/7W  
 (FORFEITED CLAIMS EXCLUDED)



COUNT FLEET  
 EXPLORATIONS LTD.  
 CF CLAIM GROUP  
 SIMIL KAMEEN M.D. NTS 9 2 H/7  
**CLAIM MAP**  
 SEPT. 1986  
 R.M. ST. LOUIS  
 FIGURE 2

the claim lines in this area be accurately established.

The claim map (Figure 2) shows four two-post claims (Marilyn 1-4) overlying the CF group. No evidence of these claims was found during the writer's visit to the property, although the possibility of plotting errors on the claim map must be considered.

#### 1.4 PREVIOUS WORK

During 1969 and 1970 Fort Reliance Minerals Ltd. (FRM) held an appreciable amount of ground in the Lodestone Mountain area. FRM observed a number of areas of copper mineralization (chalcopyrite, malachite) in the southern sector of what is now the CF group (Roberts et al., 1970). Trenching, magnetometer surveys, and geological mapping were done by FRM, but they did not find sufficient mineralization or indicators to warrant further work on the property. However, given the recent increases in the prices of platinum and the other platinum-group elements (PGE), it is felt that a new approach to this property is required. Grab samples taken from the two FRM trenches, by E. E. North, returned values of 0.002 and 0.005 oz/ton Pt, and 0.002 and 0.008 oz/ton Pd. While uneconomic at these levels, these samples point up the possibility of delineating zones that may contain mineable tonnages of the PGE at grades in the order of 0.05 oz/ton.

#### 1.5 WORK DONE

##### 1. Geochemical sampling

A total of 31 rock samples were taken for PGE assay.

These assays will hopefully be completed before 1987. The purpose of this sampling is to determine what areas deserve more intensive investigation, perhaps by trenching or drilling, during the 1987 field season, and to establish potential guides for further exploration. Sampling was done by outcrops, not on a grid.

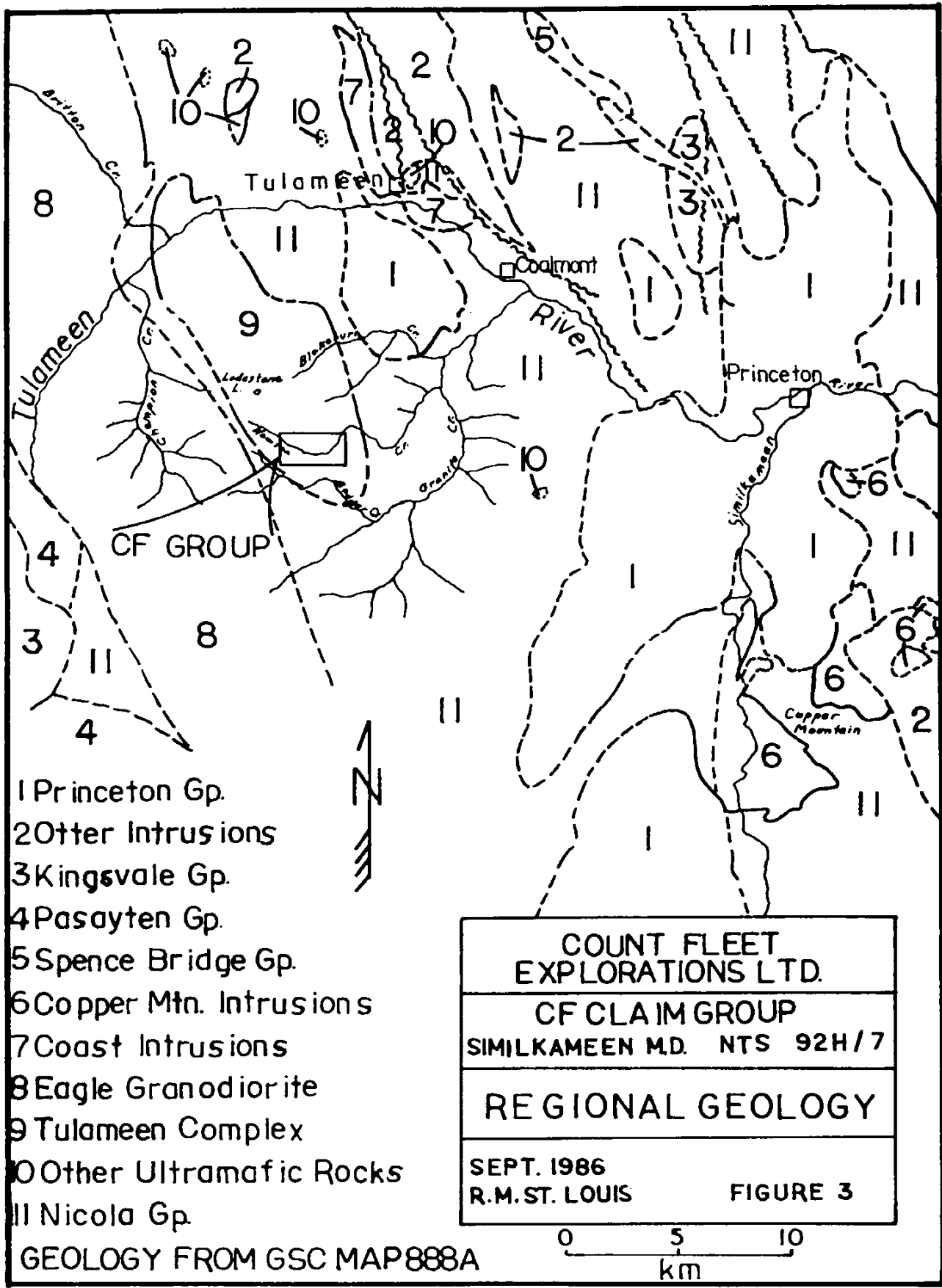
## 2. Geological survey

Geological mapping was done both at a scale of 1:50,000 using NTS 92H/7, and by hip chain and compass survey for plotting at 1:10,000. The geology of the area has been mapped in detail by Findlay (1963) and FRM (Roberts et al., 1970). Consequently, the mapping performed as part of this study consisted mainly of minor modifications to the earlier mapping, and included a pace and compass survey of the new logging road. One of the most important aspects of this geological mapping was the determination of mineralized zones, and the potential for economic mineralization.

## 2. GEOLOGY

The bulk of the claim area is underlain by the Tulameen Complex, an Alaskan-type ultramafic intrusion of Late Triassic (?) age, which intrudes the Triassic Nicola Group. The Complex covers about 60 km<sup>2</sup>, and parallels the southeast-northwest regional structural grain. The claims lie on the southern third of the intrusion, an area dominated by hornblende clinopyroxenite, syenogabbro, and syenodiorite, with lesser amounts of olivine clinopyroxenite and hornblende-olivine





clinopyroxenite (Figure 4). Brief descriptions of these lithologies are given in Table 1. The Nicola Group consists mainly of mafic volcanic rocks (andesite, basalt) with minor sedimentary rocks (sandstone, limestone, volcanic conglomerate), all of which have been metamorphosed to as high as upper greenschist facies. The metamorphic grade of the Nicola Group increases towards the Tulameen Complex.

Magnetite is locally very abundant in the Tulameen Complex, especially in hornblende clinopyroxenite, where it may constitute over 50 volume percent of the rock (Eastwood, 1959). The magnetite-rich rocks often contain appreciable concentrations of Ti and V. In addition, although sulfide mineralization is rare in the Tulameen Complex as a whole, sporadic, widespread occurrences of chalcopyrite and pyrite are observed in hornblende clinopyroxenite, syenogabbro, and syenodiorite. It is important to note that the large masses of magnetite-rich hornblende clinopyroxenite may be of economic importance purely for their contained magnetite (used in coal processing), Ti, and V. In fact, Imperial Metals, who control much of the ground north and west of the CF group, have been investigating the possibility of producing these three commodities on their property, although the writer is not aware of their present plans.

The ultramafic rocks exposed on the CF claims are generally unaltered, although locally they are sheared. Where sheared, uralitization, saussuritization, and carbonatization are common. The syenogabbro and syenodiorite are almost always slightly saussuritized, but as with the more

Table 1: descriptions of ultramafic lithologies exposed on the CF group

Hornblende clinopyroxenite

30 to 75 vol. percent clinopyroxene, 5 to 70 vol. percent hornblende, 5 to 25 vol. percent magnetite, accessory biotite. Usually black or very dark green. Often very coarse-grained, with hornblendes sometimes in excess of 5 cm in length.

Olivine clinopyroxenite

70 to 80 vol. percent clinopyroxene, 10 to 25 vol. percent olivine/serpentine, accessory magnetite and chromite. Usually black. Grain size typically less than 5 mm, although some clinopyroxene grains may be up to 1 cm in diameter.

Syenogabbro

30 to 50 vol. percent clinopyroxene, 25 to 35 vol. percent plagioclase, 15 to 20 vol. percent K-feldspar, accessory biotite and magnetite. Usually mottled white and green. Generally equigranular, with grain size of 3 to 5 mm.

Syenodiorite

10 to 25 vol. percent clinopyroxene and hornblende, 35 to 55 vol. percent plagioclase, 15 to 35 vol. percent K-feldspar, accessory biotite, magnetite, and apatite. Color and grain size similar to syenogabbro.

Hornblende-olivine clinopyroxenite

5 to 50 vol. percent olivine, 5 to 50 vol. percent hornblende, accessory magnetite. Black to dark green, generally equigranular, with grains of 3 to 5 mm.

ultramafic units, the degree of alteration generally increases with proximity to shear zones, and also near contacts with the ultramafic rocks. It is hoped that the assays of samples taken during this study will indicate what effects, if any, the shearing and alteration have had on the economic potential of these rocks (both the ultramafic and felsic rocks).

It has already been shown that the hornblende-, magnetite-, and sulfide-rich rocks of the Tulameen Complex are enriched in Pd, Os, and Au relative to ultramafic rocks in this complex lacking enrichments in hornblende, magnetite, and sulfides (St. Louis, 1984; St. Louis et al., 1986). Thus, with additional study, it may be possible to delineate relatively large tonnage, low grade PGE + Au mineralization within the claim area.

Overall, the writer has observed that sulfide mineralization (especially pyrite and chalcopyrite) is relatively widespread on the eastern half of these claims, although sulfides rarely exceed 10 volume percent of the rock. Sulfides typically occur as disseminations, but are also observed to occur in small stockworks and stringers. It appears that the sulfide content of the rocks increases near shear zones and contacts, although this is not always the case. In the one outcrop of Nicola Group rocks that the writer found, it was observed that the pyrite content increases sharply near the contact with ultramafic rocks, with greater than 20 volume percent pyrite, disseminated and in a stockwork, observed. In addition, FRM found elevated copper contents at the contacts between Nicola Group and ultramafic rocks (Roberts et al., 1970).

If the PGE and Au were remobilized during the intrusive and/or hydrothermal events and are now hosted by this pyrite and chalcopyrite in Nicola rocks, these metavolcanics could be attractive targets.

The large northeast-trending fault that traverses the northwest corner of the property is a zone that could host important sulfide mineralization. Unfortunately, no outcrops were found within this fault zone during the writer's visit. Outcrops very near the fault showed no evidence of intense deformation, indicating either that the fault is not plotted correctly or it is very narrow at surface. However, from Findlay's (1963) map, it is clear that substantial displacement of the ultramafic rocks has occurred along this fault. Therefore, this area warrants additional work.

### 3. RESULTS AND DISCUSSION

The purpose of this study was to sample and map the CF claims, on a preliminary or prospecting basis, in the hopes of establishing potential zones of PGE and Au mineralization. Although no assays are available at the time of writing, a number of field observations, together with the writer's previous experience (c.f. St. Louis, 1984) indicate that a reasonable potential for low grade PGE mineralization exists on the CF claims. The widespread occurrence of magnetite- and sulfide-rich rocks on these claims is encouraging, as are the large masses of hornblende clinopyroxenite and syenogabbro/syenodiorite exposed on the property. The possibility of additional revenues from magnetite,

Cu, Ti, and V adds to the potential of the property. However, until the analytical work is completed, there is no way of ascertaining to what extent these rocks may have been mineralized with the noble metals, nor is it possible to delineate the next phase of exploration on these claims with certainty.

It appears that the eastern half of the property contains more occurrences of pyrite and chalcopyrite than does the western half. This may be a function of the highly interdigitated nature of the lithologies in the eastern half, or may be due to the relative lack of outcrops in the western half of the property compared with the eastern half.

One unfortunate aspect of working in the Tulameen Complex is that there are apparently no good base metal indicators of PGE mineralization known at this time (St. Louis, 1984). This means that assays for the PGE, although expensive, are the only sure measure of the economic potential of the rocks. With additional work, less expensive indicators may be found. Perhaps a more definitive set of field criteria will result from these studies.

#### 4. CONCLUSIONS AND RECOMMENDATIONS

The CF claims contain the proper lithologies (hornblende clinopyroxenite, syenogabbro, syenodiorite) and enrichments in magnetite and sulfides to make them attractive from a bulk mineable, low grade, PGE + Au deposits point of view. The two preliminary assays for Pt and Pd are encouraging, though too low grade to be economic themselves. Pending the assays of the samples taken during this study, the writer recommends:

1. additional geological mapping, with sampling of lithologies bearing enrichments in sulfides and magnetite; try to determine if the apparent trend for the eastern half of the property to contain more pyrite and chalcopyrite than the western half is real, and of what significance
2. intensive mapping and sampling, and perhaps some trenching, of the large fault in the northwest corner of the property
3. trenching and sampling of zones returning favorable assays
4. ground geophysics (gravity, IP) to delineate magnetite- and sulfide-rich zones that are poorly exposed.

Subsequent to the findings of the above program, some diamond drilling may be required.

## 5. REFERENCES CITED

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127 p.
- St. Louis, R. M., Nesbitt, B. E., and Morton, R. D., 1986,  
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Geology, v. 81, p. 961-973.



## 6. ITEMIZED COST STATEMENT

Dates on property: July 24, 25, 27, 28, 29, 1986  
Number of days on property: 5

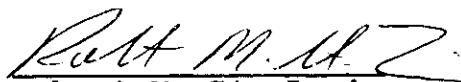
Geologist (R. M. St. Louis) @ \$250.00/day	\$1,250.00
Assistant (J. Sedlacek) @ \$100.00/day	500.00
Room and board @ \$50.00/day/man	500.00
Vehicle rental (4 x 4 wet lease @ \$125.00/day	625.00
Fuel	80.00
Mobilization and demobilization (2 days/2 men)	425.00
Assays, (31 samples @ \$18.00/sample)	558.00
Report preparation	
1 day research @ \$250.00/day	250.00
5 days writing/drafting @ \$250.00/day	1,250.00
Blueprinting, photocopies	50.00
	<hr/>
TOTAL	\$5,488.00
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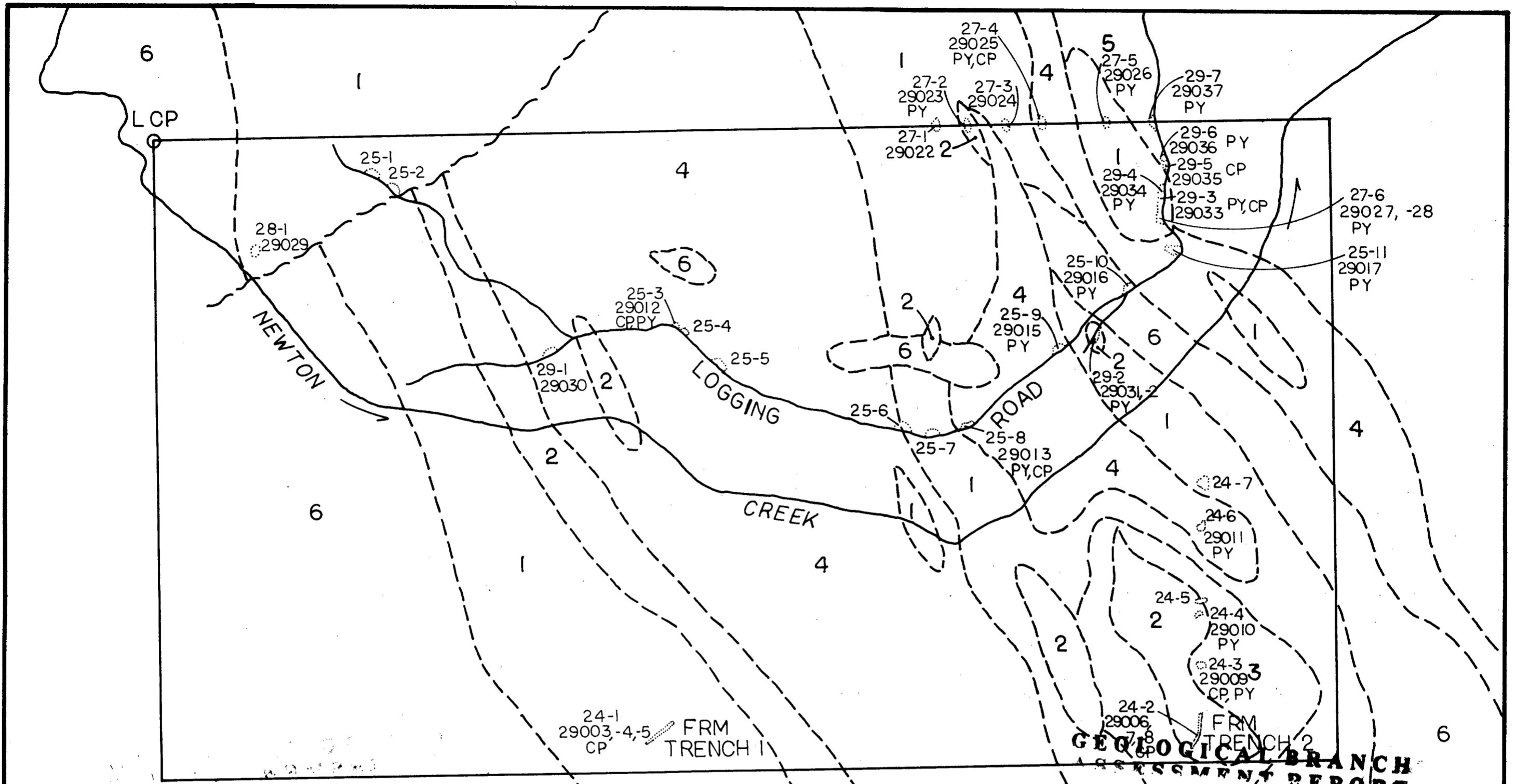
## 7. CERTIFICATE

I, Robert M. St. Louis, of Tooele, Utah, do hereby certify that:

1. I have been employed to date as a project geologist by Suburban Resources (U.S.) Inc., of Tooele, Utah
2. I hold a Bachelor of Science degree in geology from Syracuse University and a Master of Science degree in geology from the University of Alberta
3. I have practiced geology and geochemistry for four years
4. I am a member of the Mineralogical Society of America, International Association of Geochemistry and Cosmochemistry, and Utah Geological Association
5. the opinions expressed by me in this report are the result of observations made in the field during July 1986 and during research for my M. Sc. degree
6. I hereby consent to the publication of my report entitled "Report of Initial Geological Survey on the CF Claim Group" dated 3 September 1986, in a prospectus or statement of material facts.

3 September 1986  
Tooele, Utah

  
Robert M. St. Louis



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**15,326**

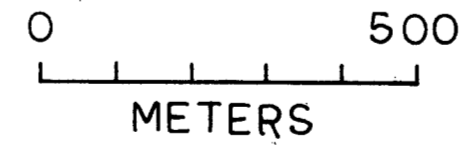
**LEGEND**

- 1 HORNBLLENDE CLINOPYROXENITE
- 2 OLIVINE CLINOPYROXENITE
- 3 HORNBLLENDE-OLIVINE CLINOPYROXENITE
- 4 SYENOGABBRO
- 5 SYENODIORITE
- 6 NICOLA GROUP

- 25-2 OUTCROP NO. 29002
- CR CHALCOPYRITE
- PY PYRITE
- FAULT
- - - - - GEOLOGICAL CONTACT
- OUTCROP
- STREAM FLOW

CLAIM POSTS AND LINES LOCATED BY PACE AND COMPASS AND TOPO. MAP

GEOLOGY COMPILED FROM THIS STUDY, FINDLAY (1963), AND FRM A.R. 2742 (1970)



COUNT FLEET EXPLORATIONS LTD.

CF CLAIM GROUP  
SIMILKAMEEN M.D., B.C. NTS 92H/7

GEOLOGY OF CLAIMS

SEPT. 1986  
R.M.S.T. LOUIS

FIGURE 4