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P R E L I M I N A R Y   G E O L O G I C A L   R E P O R T

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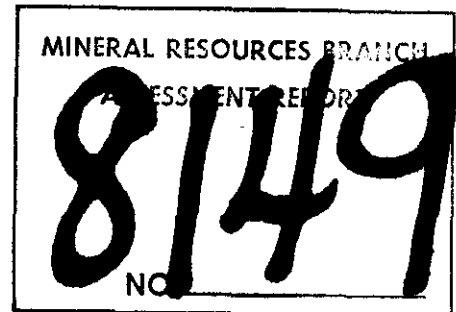
S P R I N G   G R O U P

(Spring 1-6, Athelstan, Ax, Eclipse, Alto Fr.  
Eganville, Yellow Jacket, Violet Fr., Hennekinn,  
Verde, Evening Star, Mac 1, May Fr.)

Lat. 49° 34'; Long. 118° 22'; N.T.S. 82E/9W

Greenwood Mining Division

FOR



P E A R L   R E S O U R C E S   L T D.

by

T.E. LISLE, P.ENG.

June 15, 1980

C O N T E N T S

	<u>P a g e</u>
SUMMARY AND CONCLUSIONS. . . . .	1
INTRODUCTION . . . . .	2
LOCATION AND ACCESS. . . . .	2
CLAIMS . . . . .	3
HISTORY. . . . .	4
GENERAL GEOLOGY. . . . .	5
GEOLOGY OF THE FRANKLIN CAMP . . . . .	5
GRID GEOLOGY . . . . .	7

MAPS

LOCATION MAP . . . . .	FIGURE 1
CLAIM MAP. . . . .	FIGURE 2
GEOLOGICAL MAP (POCKET). . . . .	FIGURE 3

APPENDIX 1 -- DECLARATION

APPENDIX 2 -- STATEMENT OF EXPENSES

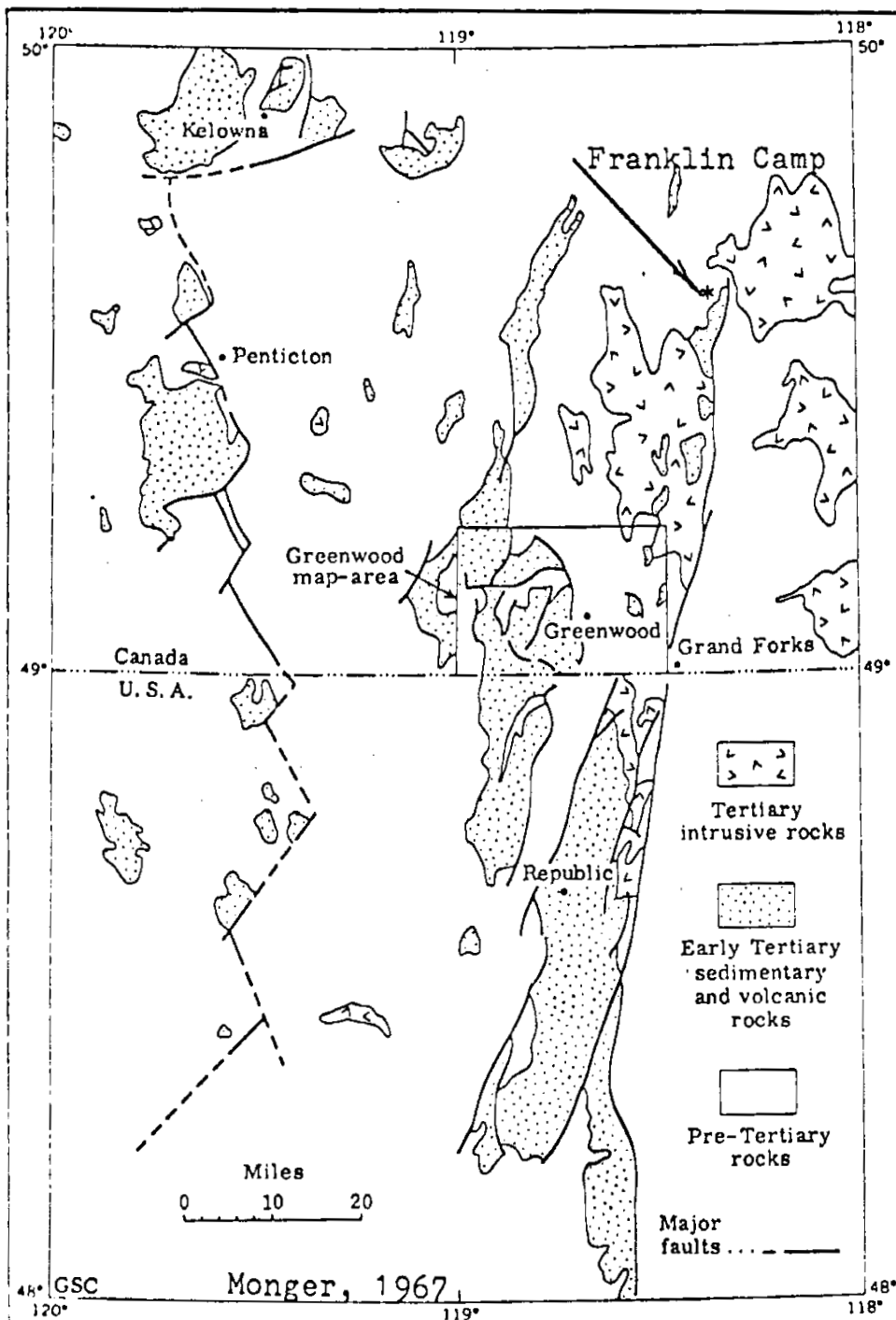


Figure 1. Distribution of early Tertiary rocks in parts of south-central British Columbia and northern Washington

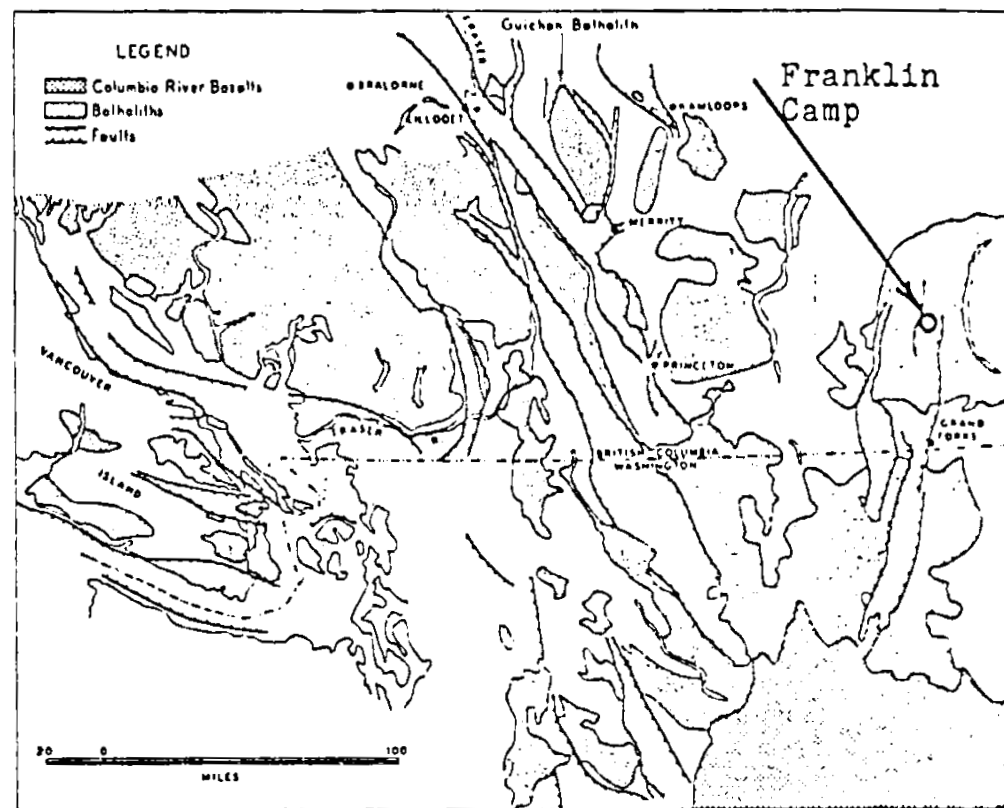


Figure 2. Regional graben pattern in southwestern British Columbia.

(After J.M.Carr, 1962, B.C. MMAR. )

LOCATION MAP

FRANKLIN CAMP

Figure 1

SUMMARY AND CONCLUSIONS

Pearl Resources Ltd. are currently exploring the Spring Group of mineral claims located around the old Union Mine, Franklin Mining Camp, Greenwood Mining Division, Lat.  $49^{\circ} 34'$ , Long.  $118^{\circ} 22'$ , NTS 82E 9W.

Past production of gold, silver, lead and zinc ore from the Union Mine, was from a narrow westerly trending, northerly dipping vein type structure in volcanic and sedimentary rocks believed to be of Paleozoic Age. Preliminary data indicates that the geology of the mine area is complex.

The eastern section of the map area is underlain by predominantly green volcanic assemblage including andesite, dark grey basalt? and green fine grained dacite? and breccias; and tuff. This unit is bounded on the west by a northerly trending sedimentary assemblage of chert, cherty to silty tuff, limestone, andesite and breccias. Within the sediments, zones of multilithic pebble breccia and conglomerate are present. Rhyolite porphyry (dacite)? thought to be early Tertiary in age occurs near the southern edge of the grid. A few siliceous zones noted in sedimentary rocks west of the Union Mine contain traces of galena and sphalerite. The importance of these zones has not been determined. The relationship of any of the siliceous zones to the host rocks is unknown and must await further study.

## INTRODUCTION

The Pearl Syndicate acquired by staking the Spring 1-6 mineral claims in the Franklin Camp, Greenwood Mining Division in June, 1979. A number of reverted crown-grant claims were also acquired and preliminary geological traverses undertaken in the same month. The geological work was continued from May 27 to June 6, 1980 in the initial stage of reassessment of the mineral potential of the claims.

The report contains geological data on an area immediately south of the old Union Mine workings. The geology of this area is complex. For this reason, and because work is still in progress, the data should be considered preliminary in nature and subject to revision. The costs incurred to June 6, 1980 are applicable for assessment purposes.

Grid lines are surveyed in with belt chain and compass but are not cut. The grid is put in at 40 foot spacings in order to correlate, at a later date, with underground geology.

## LOCATION AND ACCESS

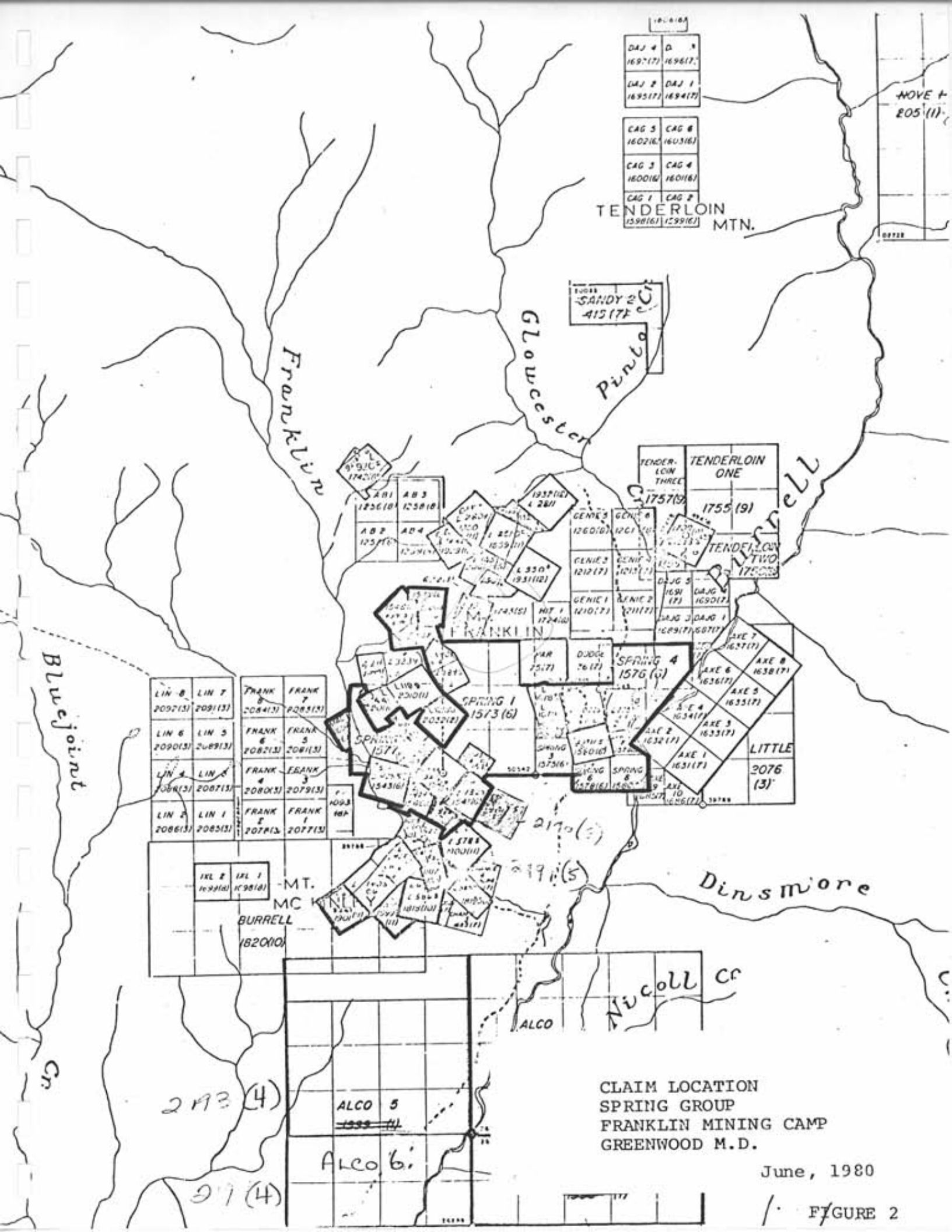
Franklin Camp is located 72 kilometers (45 miles) north of Grand Forks in southern British Columbia. Lat.  $49^{\circ}34'$ ; Long.  $118^{\circ}22'$ ; N.T.S. 82E. 9W. Access to the Camp is by paved road (30 km.) and secondary gravel roads running northerly along the Granby and north fork of the Granby River. Access within the claims is by 4-wheel drive roads.

Elevations range from 850 meters in Burrell Creek to 1430 meters above sea-level on Franklin Mountain. The Union Mine is on the lower eastern slopes of Franklin Mountain and has been investigated in the past by four levels developed between 853 and 985 meters above sea-level.

### CLAIMS

The property is comprised of the following claims in the Greenwood Mining Division.

	<u>UNITS</u>	<u>RECORD</u>	<u>ANNIVERSARY</u>
SPRING 1	6	1573 (6)	June 12, 1980
2	1	1574 (6)	"
3	1	1575 (6)	"
4	2	1576 (6)	"
5	4	1577 (6)	"
6	1	1578 (6)	"
7	1	1579 (6)	"
8	1	1580 (6)	"
9	1	1581 (6)	"



169(17)	1696(17)
DAJ 4 D 3	
169(17)	1696(17)
DAJ 2 DAJ 1	
1695(17)	1694(17)
CAG 3 CAG 8	
1602(16)	1603(16)
CAG 3 CAG 4	
1600(16)	1601(16)
CAG 1 CAG 2	
1598(16)	1599(16)

MOVE # 205 (11)

10088 SANDY 2 Cr 415 (7)

LIN 8	LIN 7	FRANK 8	FRANK 7
2097(13)	2091(13)	2084(13)	2085(13)
LIN 6	LIN 5	FRANK 6	FRANK 5
2090(13)	2089(13)	2082(13)	2081(13)
LIN 4	LIN 4	FRANK 4	FRANK 3
2086(13)	2087(13)	2080(13)	2079(13)
LIN 2	LIN 1	FRANK 2	FRANK 1
2086(13)	2085(13)	2078(13)	2077(13)

181 2	181 1
1699(16)	1698(16)
-MT. MC KINLEY	
BURRELL	
1820(16)	

TENDERLOIN THREE	TENDERLOIN ONE
1757(12)	1755(9)
TENDERLOIN TWO	
1750(12)	
GENIE 8	GENIE 7
1260(12)	1261(12)
GENIE 5	GENIE 4
1212(12)	1213(12)
GENIE 3	GENIE 2
1210(12)	1211(12)
GENIE 1	GENIE 0
1210(12)	1211(12)
DAJG 5	DAJG 4
1651(12)	1650(12)
DAJG 3	DAJG 2
1649(12)	1648(12)

AXE 7	AXE 8
1637(17)	1638(17)
AXE 6	AXE 5
1636(17)	1635(17)
AXE 4	AXE 3
1634(17)	1633(17)
AXE 2	AXE 1
1632(17)	1631(17)
AXE 10	AXE 9
1627(17)	1628(17)

CLAIM LOCATION  
 SPRING GROUP  
 FRANKLIN MINING CAMP  
 GREENWOOD M.D.

June, 1980

FIGURE 2

	<u>UNITS</u>	<u>RECORD</u>	<u>ANNIVERSARY</u>
ECLIPSE	R.C.G.	1543 (6)	June 6, 1980
ATHELSTAN	"	1541 (6)	"
AX	"	1542 (6)	"
ALTO FR.	"	1544 (6)	"
EGANVILLE	"	1545 (6)	"
YELLOW JACKET	"	1546 (6)	"
VIOLET FR.	"	1547 (6)	"
HENNEKINN	"	1548 (6)	"
VERDE	"	1549 (6)	"
EVENING STAR	"	1550 (6)	"
MAC NO. 1		1607 (6)	
MAY FR.		1611 (6)	
UNION	C.G.L.	1022	
UNION FR.	"	1678	
IDAHO	"	1679	
PAPER DOLLAR	"	1677	
HOMESTAKE	"	589S	
DEAD WOOD	"	590S	

### HISTORY

Claims were first staked at Franklin Camp in 1896 (Banner) and exploration has continued on an intermittent basis since that time. C.W. Drysdale mapped the geology of the camp and produced Memoir 56 "Geology of the Franklin Mining Camp" in 1915.



The Bulk of production (less than 200,000 tons) of gold, silver, lead and zinc ore was derived from the Union Mine in the period 1931 to 1933 by Hecla Mining Company Ltd. With the exception of smaller tonnages produced to 1947 (?) the Union property has remained inactive since that time.

#### GENERAL GEOLOGY

Franklin Camp is in a graben close to the Granby River Fault. The fault forms the eastern boundary of the Republic Graben, a Tertiary regional structure trending north-northeast through the International Boundary.

The Granby Fault separates mainly Precambrian (?) metamorphic rocks on the east from an assemblage of Paleozoic, Mesozoic and Cenozoic rocks on the west. It apparently terminates in intrusive rocks immediately north of the Franklin Camp. The structure is obscure, particularly the westerly bounding fault north of the boundary, but the trace of the graben is partly marked by a linear belt of Tertiary volcanic and sedimentary rocks.

#### GEOLOGY OF THE FRANKLIN CAMP

Mineral deposits in the Franklin Camp occur in and near a roof pendant of volcanic and sedimentary rocks previously mapped as part of the Anarchist Group of Paleozoic age. Deposits occur both in the pendant and in younger Tertiary aged intrusions. The pendant outcrops over about eight square

miles, and trends westerly from the Granby River Fault. It is locally intruded and largely surrounded by an assemblage of Cretaceous or Tertiary aged intrusive rocks, and is partly covered by Tertiary volcanic and sedimentary rocks.

The Franklin roof pendant contains a wide assortment of lithologies including tuff, breccia, argillite?, cherty quartzite?, conglomerate, limestone, dacite and andesite. The rocks have been subjected to both regional and contact metamorphism.

Many of the mineral deposits are spatially related to the upper younger (?) strata, particularly the Gloucester Limestone. Drysdale and others have noted the similarity of this unit to the Brooklyn Limestone at Greenwood, and a direct correlation likely exists. Mineralization in the pendant includes pyrite, chalcopyrite, galena, sphalerite, magnetite, hematite, pyrargyrite, and contains important concentrations of gold and silver.

The Union Mine on Franklin Mountain has been developed on 4 levels and 2 sub-levels over a vertical range of about 150 meters. The deposit occurs in Franklin greenstones a short distance south of Eocene? syenite and pyroxenite intrusions. The 1929 Minister of Mines Report describes the deposit in part as follows:

".... In the Union the surface ores were chiefly galena, sphalerite, with a little chalcopyrite and pyrargerite in a quartz gangue. In the lower levels the galena, sphalerite and pyrargerite have been to a great extent replaced by fine-grained pyrite. The highest values are found to be associated with siderite and hematite.

The Union group, which was bonded two years ago by the Hecla Mining Co. has been steadily developed on the second, third and fourth levels. In the upper levels the ore-body varies in width from 5 to 12 feet and is mineralized chiefly with pyrite, containing gold and silver in gangue of quartz and greenstone. Numerous block faults displace the vein a few feet. There are no commercial walls to this fissure and the size of the vein can be determined only by close sampling and assaying. The country rock, a greenstone, adjacent to the vein is to all appearances similar to the ore; so that extreme care will have to be exercised when mining, ...." "In the fourth, or lowest level, only disintegrated pieces of ore have been found up to the present. The country rock and ore has the appearance of recemented fragments. This condition may be due to the dyke intrusive or to the proximity of the batholith. ...."

#### GRID GEOLOGY

The area south and west of the Union Mine workings displays a wide variety of volcanic and volcanic-related sedimentary rocks. Some of the rocks, particularly the green coloured tuffs and andesite, are difficult to classify. The preliminary data indicates that individual formations trend north to north-northeast and the more distinct lithologic units noted are separated as follows:

##### 1) MULTILITHIC BRECCIA AND CONGLOMERATE

This unit is noted in several outcrops mainly west of the Union Mine workings and apparently was encountered in

the westerly underground workings at the upper elevations. The unit is comprised of abundant fragments of chert, limestone, quartz, tuff and andesite?, in a tuffaceous or siliceous matrix. The fragments vary from tuff size which are commonly rounded, to larger angular fragments 10 to 15 centimeters in diameter. Three to ten inch limestone cobbles are reported near the west end of the No. 1 level, and larger fragments are present at surface. Any of the contained fragments may be dominant to the point that the unit may more readily be named breccias or conglomerate of that particular unit. Most of the fragments are from rocks in the general area and the unit is believed to have formed locally.

2) RHYOLITE PORPHYRY

This unit occurs as an irregular westerly trending zone near the south end of the grid. The rock is comprised of 10-20% white feldspar crystals and up to 8% commonly chloritized hornblende in a pale grey green aphanitic matrix. The porphyry is locally pyritized and occurs in an area of mixed tuffaceous and andesitic rocks. Some of the outcrops display subrounded to subangular fragments both within and peripheral to the main porphyry mass.

3) SEDIMENTARY UNIT

The multilithic pebble breccia noted above is contained within a larger sedimentary unit that also contains

laminated chert (brown) and an assemblage of brown to grey to green, and locally black, silty and cherty tuffaceous sediments and related breccias. Also included are irregular andesitic zones, narrow limestone lenses, and a distinct fragmental zone lying near the south edge of the multilithic breccia containing fragments of augite andesite and cherty tuff in a pale green tuffaceous matrix. Small irregular zones of the multilithic breccia occur near the eastern edge of the chert horizons. The sedimentary rocks are offset by at least one strong west-northwest trending fault. Strikes within the chert horizons are locally diverse but mainly consistent with the northerly trend, and dips are either steeply east or west. It should be noted that the limestone is also consistent with the trend in other areas of Franklin Camp.

#### 4) VOLCANIC UNIT

The area south of the Union Mine workings east of the sedimentary unit is underlain by a mixture of andesite and related fragmental rocks. The rocks are commonly coloured green and grey-green to black, and the areas south of the Union workings is marked by widespread development of breccia. The geological detail of this area is complex, and preliminary work has shown the following variations:

(a) Andesite, pale to dark green and commonly fine grained but varies to medium to coarse grained. Rocks are

locally chloritized and pyritized and near the Union Mine are brecciated. These rocks locally contain tuffaceous material.

(b) Dark grey porphyritic basalt and breccia. This rock commonly occurs with a pale-green altered dacite?, and both may occur as small angular to subrounded clasts. The dacitic clasts locally resemble altered rhyolite and may occur in andesitic rocks which are also brecciated (slump or flow)?. They vary in size to approximately 2 or 3 centimeters while fragments from the latter structures vary to about 15 centimeters.

(c) Green tuffaceous zones are present within the volcanic complex and are likely related to areas of breccia noted above. In the area of the rhyolite porphyry, tuff is more abundant and more cherty.

Fracturing and brecciation is more evident towards the Union Mine and a number of narrow northeasterly trending breccia zones are present in this area. These zones are thought to be related to soft-sediment movement as they exhibit little shearing.

##### 5) PULASKITE

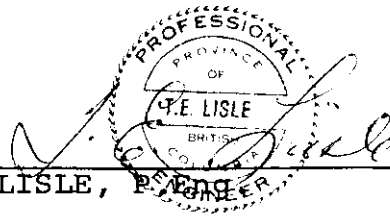
This unit is a tan to buff coloured fine grained dike rock with locally conspicuous feldspar crystals. Only small outcrops in the area of the volcanic unit were noted

but its presence over a larger area is indicated mainly by float.

A number of small irregular siliceous and quartz breccia? zones cut both the sedimentary and multilithic units in a westerly trend. Minor amounts of galena and sphalerite are present in the areas noted. Most of these zones are in structurally complex areas and their economic importance has not been determined.

June 30, 1980

T.E. LISLE, P. ENG'ER



A P P E N D I X 1

DECLARATION

I, Thomas E. Lisle, of the District of North Vancouver, Province of British Columbia, Canada, declare:

I am a geologist residing at the above address.

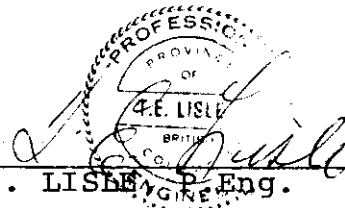
I am a graduate of the University of British Columbia in 1964 with a Bachelor of Science degree, and am a registered member of the Association of Professional Engineers of British Columbia.

I have practiced my profession since graduation, and was engaged in exploration geology for several years prior to 1964.

This report is based on field work carried out on the property in June, 1979 and 1980 by the personnel listed in Appendix 2.

The author also has experience in Franklin Camp dating to 1963.

Dated at Vancouver, B.C. this *30* day of June, 1980

A circular professional seal for T.E. Lisle, a Professional Engineer in the Province of British Columbia. The seal contains the text "PROFESSIONAL ENGINEER", "PROVINCE OF BRITISH COLUMBIA", and "T.E. LISLE". A handwritten signature is written over the seal.  
T.E. LISLE, P. Eng.



A P P E N D I X 2

Statement of Expenses

Spring Group -- Greenwood M.D.

T.E. Lisle, P.Eng. - Geologist

1979 - June 6-11 = 6 days

1980 - May 27 - June 6 = 11 days

17 days @ \$175.00 \$ 2,975.00

D. Gaard - Geologist

June 2-6, 1980 5 days @ \$100.00 500.00

P. White - Assistant

May 27 to June 6, 1980 11 days @ \$40.00 440.00

D. Fennings - Assistant

June 6-11, 1980 6 days @ \$40.00 240.00

Camp Costs

39 days @ \$15.00 585.00

Truck Rental

17 days @ \$35.00 595.00

\$5,335.00

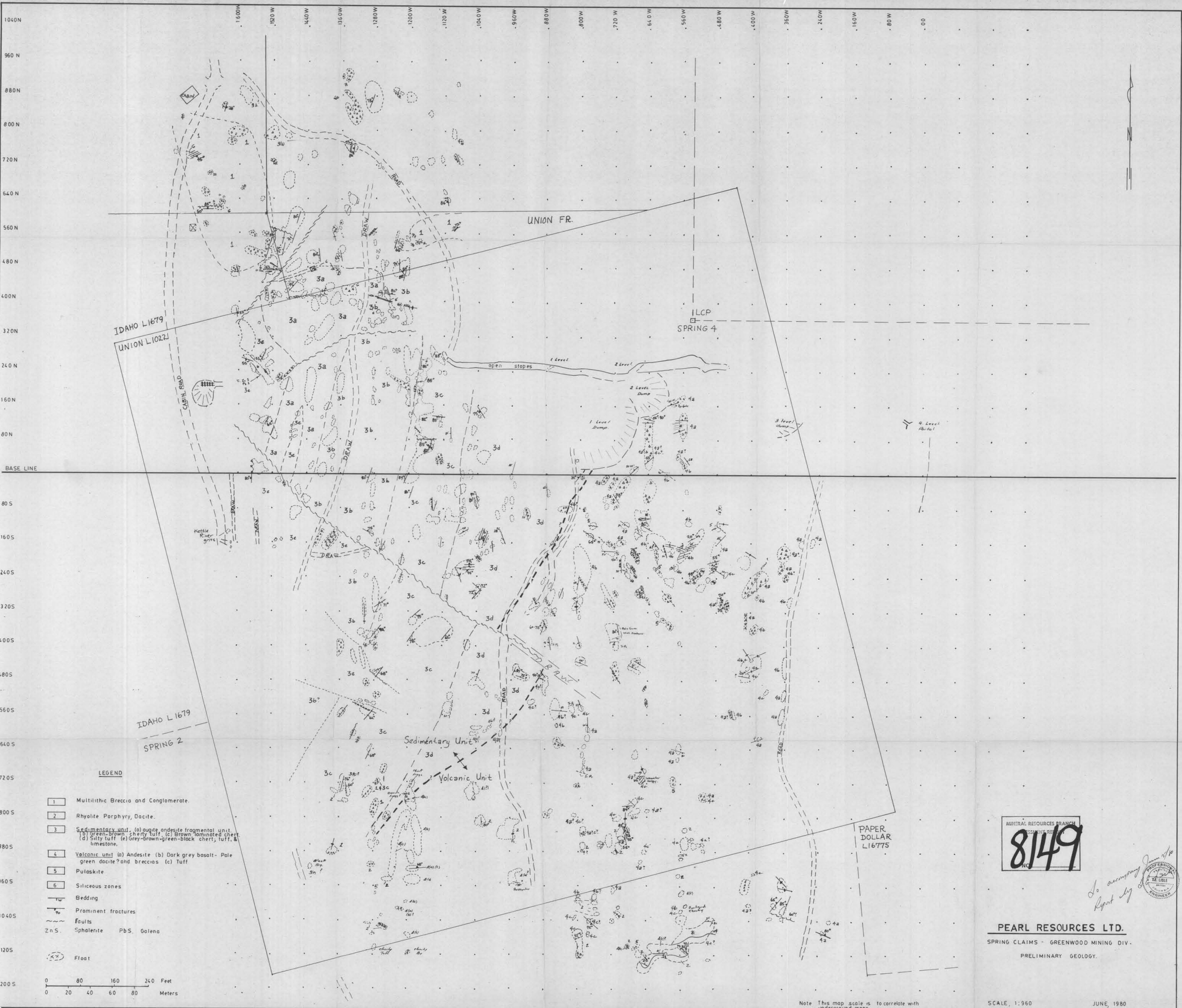
Report and Map Preparation - T. Lisle

2 days @ \$175.00 350.00

\$5,685.00

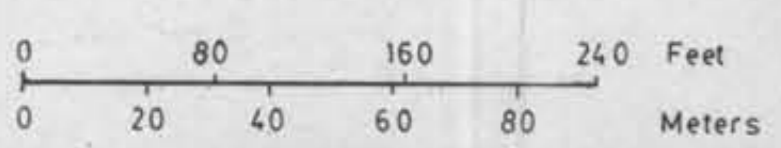






**LEGEND**

- 1 Multilitic Breccia and Conglomerate.
- 2 Rhyolite Porphyry, Dacite.
- 3 Sedimentary unit. (a) andesite fragmental unit (b) green-brown cherty tuff. (c) Brown laminated chert (d) Silty tuff (e) Grey-brown-green-black chert, tuff, & limestone.
- 4 Volcanic unit (a) Andesite (b) Dark grey basalt- Pale green dacite? and breccias (c) Tuff
- 5 Pulaskite
- 6 Siliceous zones
- Bedding
- Prominent fractures
- Faults
- Zn S. Sphalerite Pb S. Galena
- ⊗ Foot



PAPER DOLLAR L16775

MINERAL RESOURCES BRANCH  
8149

*Do accompany Report by*

**PEARL RESOURCES LTD.**  
 SPRING CLAIMS - GREENWOOD MINING DIV.  
 PRELIMINARY GEOLOGY.

Note This map scale is to correlate with underground maps

SCALE, 1:960

JUNE, 1980