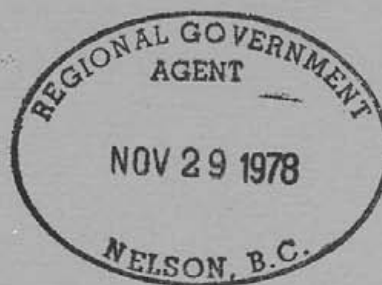


'78 #414-#6993

Assessment Report



on a

Brief Geological Examination and Sampling Program

on the

Porcupine (Reverted Crown Grant) Mineral Claim

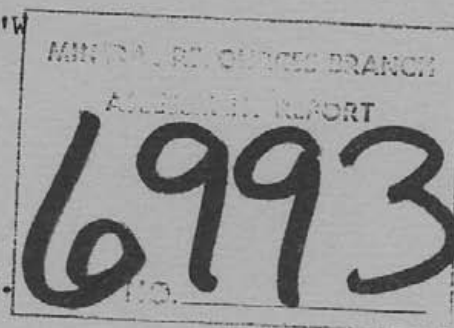
(Porcupine Group)

Porcupine Creek, Ymir Area, B. C.

Nelson Mining Division

N.T.S. 82F/6E

Latitude $49^{\circ}15'N$; Longitude $117^{\circ}10'W$



Field Work August 23, 24, 1978.

Report By

D. R. Cochrane, P. Eng.

November 15, 1978

Delta, B. C.



Cochrane Consultants Limited
4882 Delta St., Delta, B.C. V4K 2T8 946-9221
Geotechnical Consulting / Exploration Services

geology
geophysics
geochemistry

TABLE OF CONTENTS

	Page
INTRODUCTION	1
LOCATION AND ACCESS	3
CLAIMS INFORMATION	4
GENERAL SETTING	5
HISTORY	7
GENERAL GEOLOGY	9
WORK DONE	11
RESULTS OBTAINED	12
DISCUSSION	15

FIGURES

1	Location Map	Report body
2	Claims Sketch & Assay Plan	Map pocket

APPENDICES

I	Certificate
II	Certificate of Assay
III	Bibliography
IV	Assessment Work Details



INTRODUCTION

In August, 1978, the author, in the company of Mr. C. F. Graham and Mr. I. Urquhart (both of Merritt B. C.) inspected the Porcupine Mineral Claim situated on Porcupine Creek some 5 road kilometers southeast of the town of Ymir B. C. Work included establishing a blazed and chained tie line, the location and sampling of various "showings" relative to the tie line, and analysis of the samples for their content in gold (Au), silver (Ag), lead (Pb) and zinc (Zn).

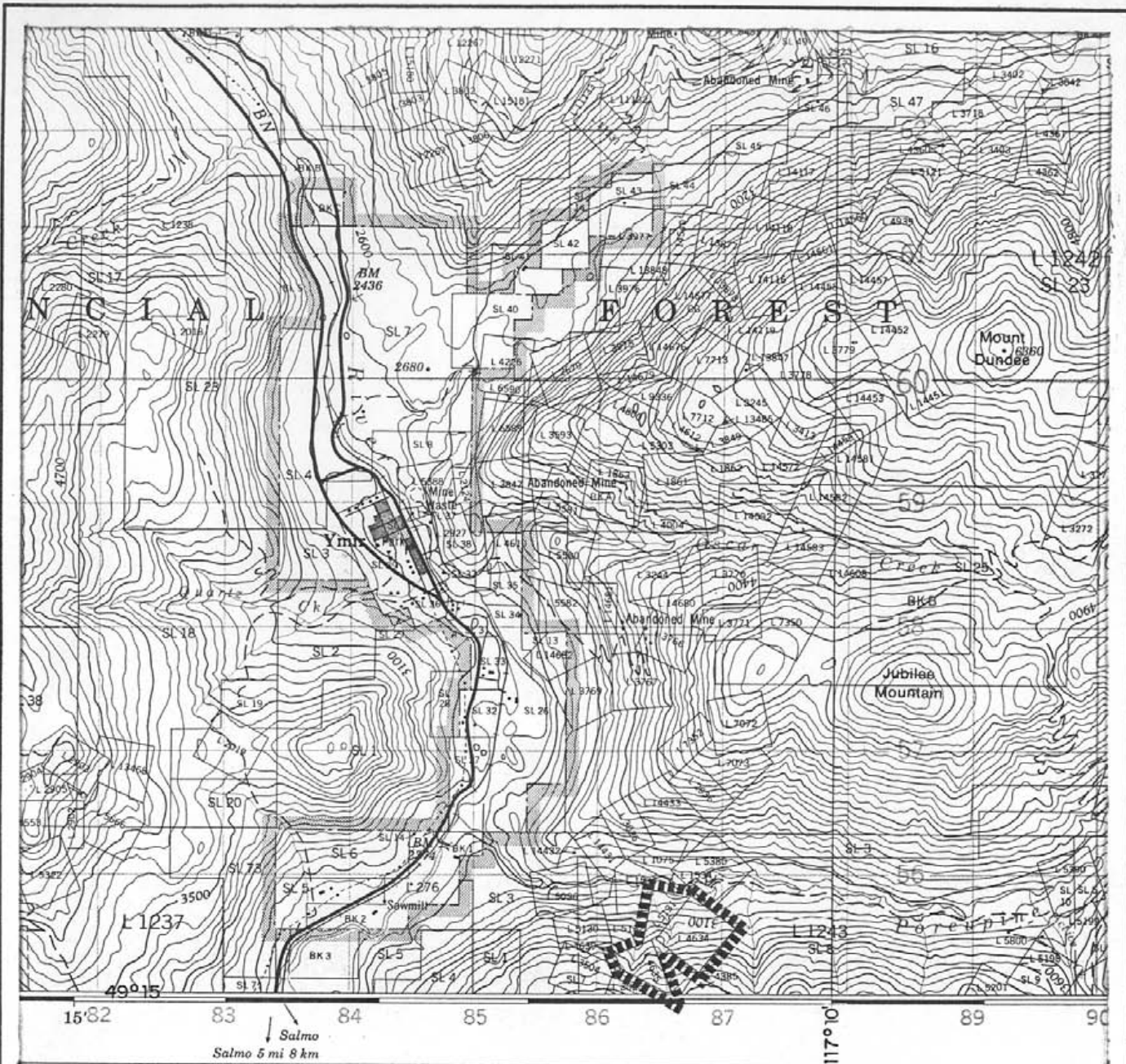
The purpose of the work was to re-evaluate the old showings (in addition to other claims on the Ymir Camp) in view of the increased metals price of both gold and silver. This report has also been prepared for assessment work submission, and pertinent details (including costs incurred) is appended at the back of this report.

Please note that metric measurement units have been used exclusively in this report except for assay information which, in the case of precious metals, is still currently being reported in troy ounces per short English ton.



(One troy ounce per short ton is equivalent to 34.29 grams per metric tonne, (Appendix V, McKinstry, Mining Geology, Prentic Hall, 1948)).

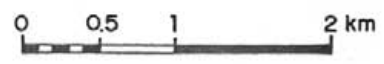




YMIR VENTURE

— PORCUPINE GROUP —

Porcupine, Franklin & Champagne Claims near Ymir, B.C.
 Nelson Mining Division N.T.S. 82 F/6



1:50,000

FIGURE 1
 LOCATION MAP

LOCATION AND ACCESS

The Ymir Gold Camp is situated in British Columbia's Kootenay District, some 40 odd air kilometers east and slightly north of Trail, and 20 air kilometers south of the city of Nelson. The town of Ymir is the nearest settlement and consists of a hotel, general store and gas station and several residences. Ymir is located on highway # 6 which follows the Salmo River and it is serviced by the West Kootenay Power line and Burlington Northern Rail line.

Access to the claims during snow free months may be made by car by proceeding south from Ymir along Highway #6, then across the river and up Porcupine Creek for two kilometers or a total of approximately 5 road kilometers from downtown Ymir. The north part of the Porcupine claim crosses the creek near the bridge. The Franklin and Champagne claims are west and south of the Porcupine respectively.

The N.T.S. code for the area is B2F/6E, the latitude $49^{\circ}15'N$, and longitude $117^{\circ}10'$ West. (see location map)



CLAIMS INFORMATION

The Porcupine, Franklin and Champagne claims are reverted crown grants acquired by Mr. I. Urquhart of Merritt, B.C. in the fall of 1975. They are registered in the Nelson Mining Division and are shown on B. C. Dept. of Mines Claim Map 82F/6E.

The following table lists pertinent claims information:

CLAIM NAME	LOT #	RECORD #	ACRES	EXPIRY DATE*
Porcupine	4634	120	51.65	Nov. 10/78
Franklin	4635	121	23.07	Nov. 10/78
Champagne	5131	125	18.36	Nov. 10/78

* As of November 5, 1978



GENERAL SETTING

The Ymir Gold Camp lies within the Nelson Range of the Selkirk Mountain complex which is an impressive northerly trending upland surface bounded on the west by the Columbia River, and on the east by Kootenay Lake and River. The area is characterized by rugged peaks which rise to elevations in excess of 2200 meters above sea level with moderately steep slopes and deeply incised stream valleys.

Forest cover is extensive below elevations of about 1800 meters and consists of stands of tamarack, hemlock and fir. Above this level the vegetation is sup-alpine type, open and snow covered for many months of the year.

The area is readily accessible by air, road and rail, and the major population centers include Castlegar (which is serviced by air by P.W.A. from Vancouver), Nelson (pop. 6772 in 1951) and Salmo. Ymir is essentially a "ghost town" but is strategically located in the Salmo Valley between Nelson and Salmo, and has a full compliment of "services".

The bedrock geology of the region is complex, but is dominated by the extremely large Nelson Batholith



(and satellitic bodies) lying to the west of Ymir and which underlies the greater part of the entire Nelson map sheet (82F/6E)

The geological history of the area is long and involved and dates from the Precambrian through to a complex Pleistocene history. Geological bias is north-northwesterly with a few major valleys running transverse to this direction (i.e. Ymir and Porcupine Creeks)

The mining history dates from 1885 when the first strikes were made, however, there was little attention paid to the area until the mid 1890's and after the Rossland rush when new locations were being considered. In 1896 many of the well known claims were staked and two years later the Ymir camp began to attract considerable attention. This activity lasted for six or seven years, after which the Salmo Camp became the center of attention. There was a brief flurry in the late 20's and early 30's but essentially the camp is an old one, and remains relatively untouched by modern exploration techniques.



HISTORY

The history of the property under discussion is well documented in various Minister of Mines Reports, and the following is a précis of the history:

The Porcupine claim, the oldest claim in the immediate area and the one the creek is named after, was staked in 1895 and most of the old workings date back to 1897. It was crown granted by J. S. Clute in 1902 and was worked by Messers. Haukendahl, Guille and Peterson in the 20's. The property originally consisted of seven (7) claims (Easter, Porcupine, Amador, Sunrise, Franklin and Champagne), and the name of the group was changed to the Maple Leaf in the early '50's.

Apart from the first years of activity in the late 1800's, work on the Porcupine and adjacent claims was primarily conducted between 1925 to 1930 and again in the 1940's.

In 1926 and 1948 the Porcupine shipped a total of 44 tons of ore containing 405 ounces of silver, 3747 pounds of lead, 3832 pounds of zinc and 3 ounces of gold. (Memoir 308).



The average of the 44 tons shipped is tabulated below.

Porcupine (Maple Leaf)				
<u>Tons</u>	<u>%Pb</u>	<u>%Zn</u>	<u>Ag (oz/ton)</u>	<u>Au (oz/ton)</u>
44	4.26	4.35	9.20	0.068

The presence of tin has also been noted in the Porcupine mineralization.

In 1948, the Maple Leaf Gold Mining Co., drove an adit on the property and shipped 26 tons to the Trail smelter. Since that time only periodic surface work has been completed.

The Porcupine is extensively developed and workings consist of ten (10) short adits and a number of open cuts. Many of the adits are now caved and inaccessible.



GENERAL GEOLOGY

The Ymir Gold camp lies on the east flank of a large, north trending synclorium whose axis runs from Salmo to Nelson, a distance of roughly 40 kilometers. The synclorium is "floating" being enclosed for the most part in Nelson plutonic rocks, and the latter is considered by most workers as being derived by metamorphism of pre-existing volcanic and sedimentary rocks (Little, pg. 98). The synclorium consists of the following sequence (from outside or oldest, towards the center):

1. Lower or Pre-Jurassic Ymir Group (formerly Pend D'Oreille by Drysdale) consisting of argillite, slate and paragneiss.
2. Lower Jurassic Rossland Formation consisting predominately of greenstones.
3. Mid/Upper Jurassic Hall Formation, which conformably overlies the Rossland, and consists of argillite, sandstone and conglomerate.



This entire complex is intruded by various intrusives of the Nelson plutonic suite and is locally strongly deformed and metamorphosed.

To the east of the synclinorium is a sequence of Cambrian and Ordovician strata that are northerly trending and are characterized by quartzite, argillite and various schists.

An extensive mantle of drift covers much of the bedrock surface.

Mineralization on the Porcupine, Franklin and Champagne claims consists of pyrite, galena, and sphalerite, with silver and gold values lying within Per d D'Oreille schists at or close to the contact with small bodies of Nelson plutonic rocks. Traces of copper and tin have been reported, and mineralization has been previously classified as lying within silicified and/or shear zones. The author's first impression of the mineralization is that although veins do exist there is considerable evidence of replacement, specifically on the lower cuts near the creek and on the Porcupine claim.



WORK DONE

In order to tie in existing old workings, a tie line was chained, blazed and flagged from the "upper" showings area to the "lower" zone, offset to various workings, and conducted by chain and compass methods. The tie line extends from 1000N; 1000E, at a bearing of 020° (true), to the creek at 1130N; 1037E (all units in meters, with N being "true" north). A sketch of the various showings was constructed (relative to the tie line) and samples were collected, described, tagged and sent to assay from eight (8) separate locations.

Assaying of the samples was completed by Bondar Clegg and Co. Ltd. of Vancouver B. C. Analysis was for Au, Ag, Pb and Zn. (see Figure 3).

The samples were all quite biased, and only mineralized samples were collected and these included chips from vein material, and mineralized samples from old dumps.



RESULTS OBTAINED

Samples from eight (8) locations were collected on The Porcupine Claim and the position of samples is shown in the accompanying map and a summary is presented in Table 1 on the following page.

The samples collected and described in Table 1, were collected from the several veins exposed on the property. There is, however, some disseminated (replacement type) lead-zinc mineralization occurring at some short distances from the veins in what appears to be "limey" schists.



TABLE 1

PORCUPINE CLAIM - ASSAY RESULTS - 1978 WORK
(Please see accompanying sketch map for location)

<u>SAMPLE</u>	<u>DESCRIPTION</u>	<u>Au</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
P-1	Chip sample across 20 cm vein striking north and dipping to the west at 60°. Parallel to a fault with a similar attitude.	0.008	1.02	1.35	0.51
P-2	Grab samples from a dump from a vein approx. parallel to and some 10 meters east of P-1	0.033	6.39	3.52	5.00
P-3	Grab samples from a dump with caved portal along strike from P-2 and some 37 meters south.	0.045	1.02	3.30	1.50
P-4	Grab samples from a dump on a partly sloughed winze exposing a mineralized quartz vein approx. 1 m wide, striking north and dipping westerly at 45 degrees.	0.005	2.36	2.50	1.92
P-5	Grab samples from a dump. Small side hill pit near dump exposes a 30 to 60 cm. vein with pyrite and galena striking 140° and dipping 45° to the southwest, parallel with schistosity.	0.007	3.29	4.35	1.20

cont.....

TABLE 1 (cont.)

<u>SAMPLE</u>	<u>DESCRIPTION</u>	<u>Au</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
P-6	Grab samples from the dump of a prospect pit presumably the extension of a vein exposed in an adjacent stub adit. Vein is 1.7m wide strikes 100° , and dips 50° to the north.	0.019	8.80	5.10	5.15
P-7	Random grab samples collected from lowermost stockpile near Porcupine Creek and bridge.	0.011	4.51	1.10	2.30
P-8	Selected samples from stockpile described in P-7 above.	0.023	5.32	6.25	1.22

DISCUSSION

The gold content of the material sampled is relatively low compared with the Ymir Camp average, and gold ranges from 0.005 to 0.045 troy ounces per short ton (\$1.03(US) to \$9.28 (US) gross per ton based on the average gold price for September 1978 as quoted in The Engineering and Mining Journal of \$206.30 US).

Silver content is of considerable interest and ranges from a low of 1.02 to a high of 8.80 ounces per ton. The arithmetic average of the silver content from the samples collected is 4.09 ounces per ton. The silver content appears to correlate moderately well with the combined lead and zinc content.

The average lead content of the eight (8) samples is 3.43% and the average zinc content is 2.35% for an average Pb/Zn ratio of 1.46 and total average Pb-Zn combined content of 5.78%.

The results of this recent work suggest that the old workings are of only modest economic interest. The exposed "veins" carry relatively low values in both gold and silver,

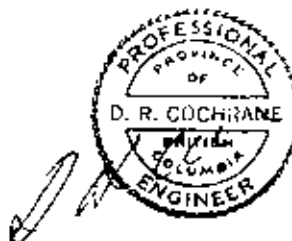


and the combined lead - zinc content is below a level that may be considered possibly economic at the present price levels for these metals. However, there are two features of the "Porcupine" that are worthy of discussion and these are:

1. There is an oblique system of veins on the Porcupine claim, and the projected intersection of the "upper" northerly trending vein system, and "lower", westerly trending vein system is, as yet, unexplored.
2. It is my opinion that the replacement mineralization possibilities on the claim and area in general has been somewhat neglected.

A short geochemical orientation survey would probably be of value on The Porcupine and adjacent claims.

Respectfully submitted



D. R. Cochrane, P. Eng.



APPENDIX 1

CERTIFICATE

I, Donald Robert Cochrane, of the Municipality of Delta, British Columbia, do hereby certify that:

1. I am a consulting geological engineer with an office at 4882 Delta Street, Delta, B. C.
2. I am a graduate of the University of Toronto (1962) with a degree in Applied Geology (B.A. Sc.) and a graduate of Queen's University (1964) with a degree in Economic Geology (M.Sc., Eng.).
3. I have practiced my profession continuously since graduation while being employed by such companies as Noranda Exploration Co. Ltd., Quebec Cartier Mines, and Meridian Explorations Syndicate. I have been in private independant practice since 1969.
4. I am a member in good standing of the Association of Professional Engineers (A.P.E.) of the Province of British Columbia, and also a member of the A.P.E. in the Province of Ontario, Saskatchewan, and the Yukon Territories.

November 15, 1978
Delta, B. C.

(signed) D. R. Cochrane, P. Eng.



APPENDIX II

CERTIFICATE OF ASSAY




1 - 4882 - Delta Street
Delta, B.C.

CERTIFICATE OF ASSAY

Samples submitted: November 3, 1978
Results completed: November 8, 1978
PROJECT: Y Venture

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER	Pb	Zn						TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent		
P - 1	0.008		1.02	1.35	0.51						
2	0.033		6.39	3.52	5.00						
3	0.045		1.02	3.30	1.50						
4	0.005		2.36	2.50	1.92						
5	0.007		3.29	4.35	1.20						
6	0.019		8.80	5.10	5.15						
7	0.011		4.51	1.10	2.30						
8	0.023		5.32	6.25	1.22						



Registered Assayer, Province of British Columbia

APPENDIX IV

ASSESSMENT WORK DETAILS

FIELD WORK

	D. R. Cochrane, P. Eng. August 23, 24,, 1978	
	2 days @ \$230/day	\$ 460.00
Prospector,	August 23, 24, 1978	
	2 days @ \$60/day	\$ 120.00
Prospector,	August 23, 24, 1978	
	2 days @ \$60/day.....	\$ 120.00
Assay Costs	\$ 156.00
Vehicle, Accommodation, Food Expenses	\$ 60.00
Report Preparation:		
	Draftsperson, Oct. 20, 23, 1978	
	20 hrs @ \$13.50/hr	\$ 270.00
Typist,	Nov. 17, 1978	
	4½ hrs. @ \$9/hr	\$ 40.50
	D. R. Cochrane, P. Eng. Nov. 15, 1978	
	½ day @ \$230/day	\$ 115.00
Reproduction.....		\$ 32.29
Total.....		\$ 1,383.79



APPENDIX III

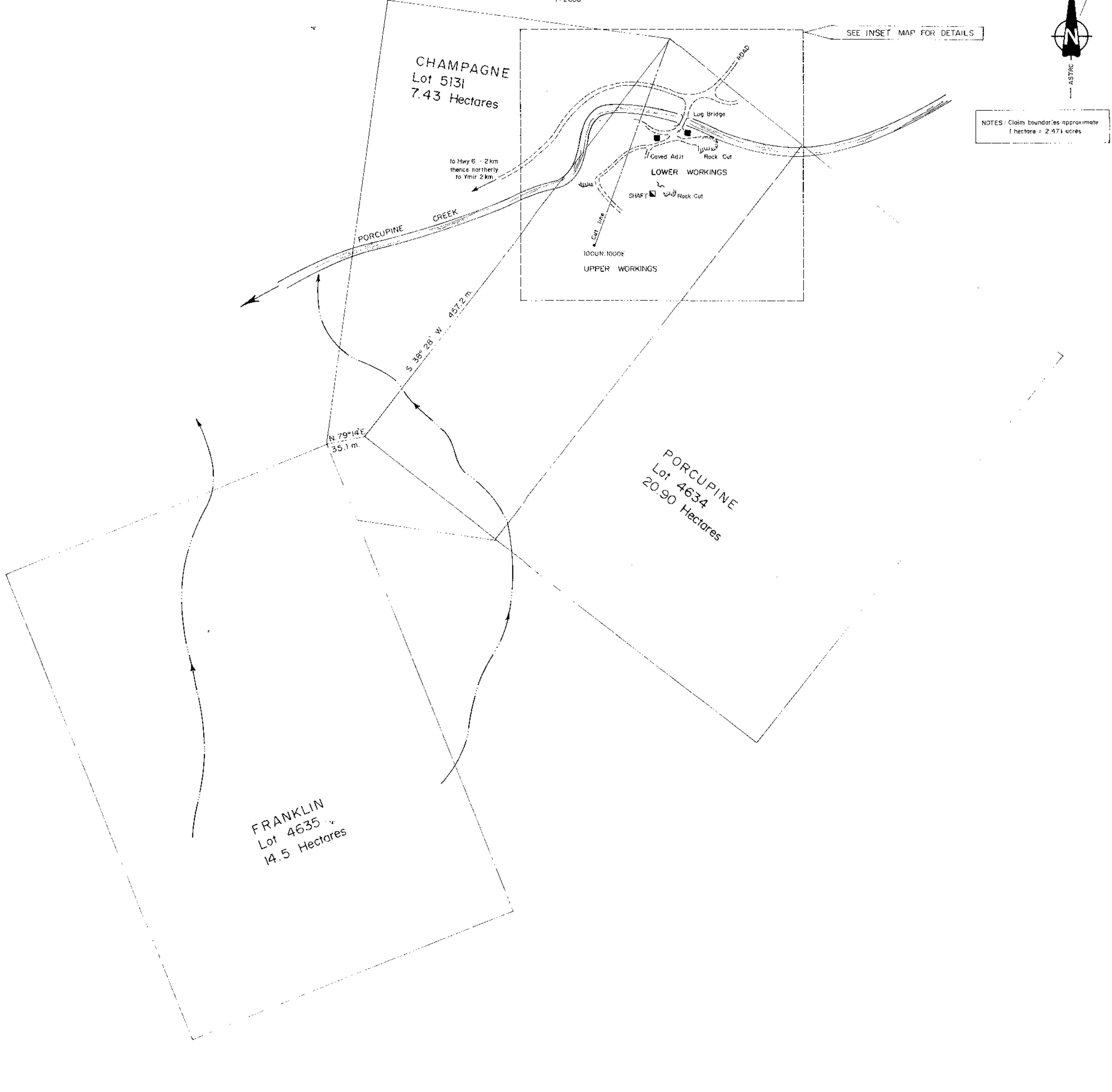
BIBLIOGRAPHY

Minister of Mines, B. C., Annual Reports: 1925, p. 249;
1930, p. 273, 1939 p. 81; 1944 p. 61;
1948 p. 133. Drysdale, 1917B, pp. 3, 133,
Cockfield, 1936, pp. 16, 17. McAllister,
1951, p. 40., Little, 1960.

Cochrane, D. R.
1976 Geological Assessment Report.



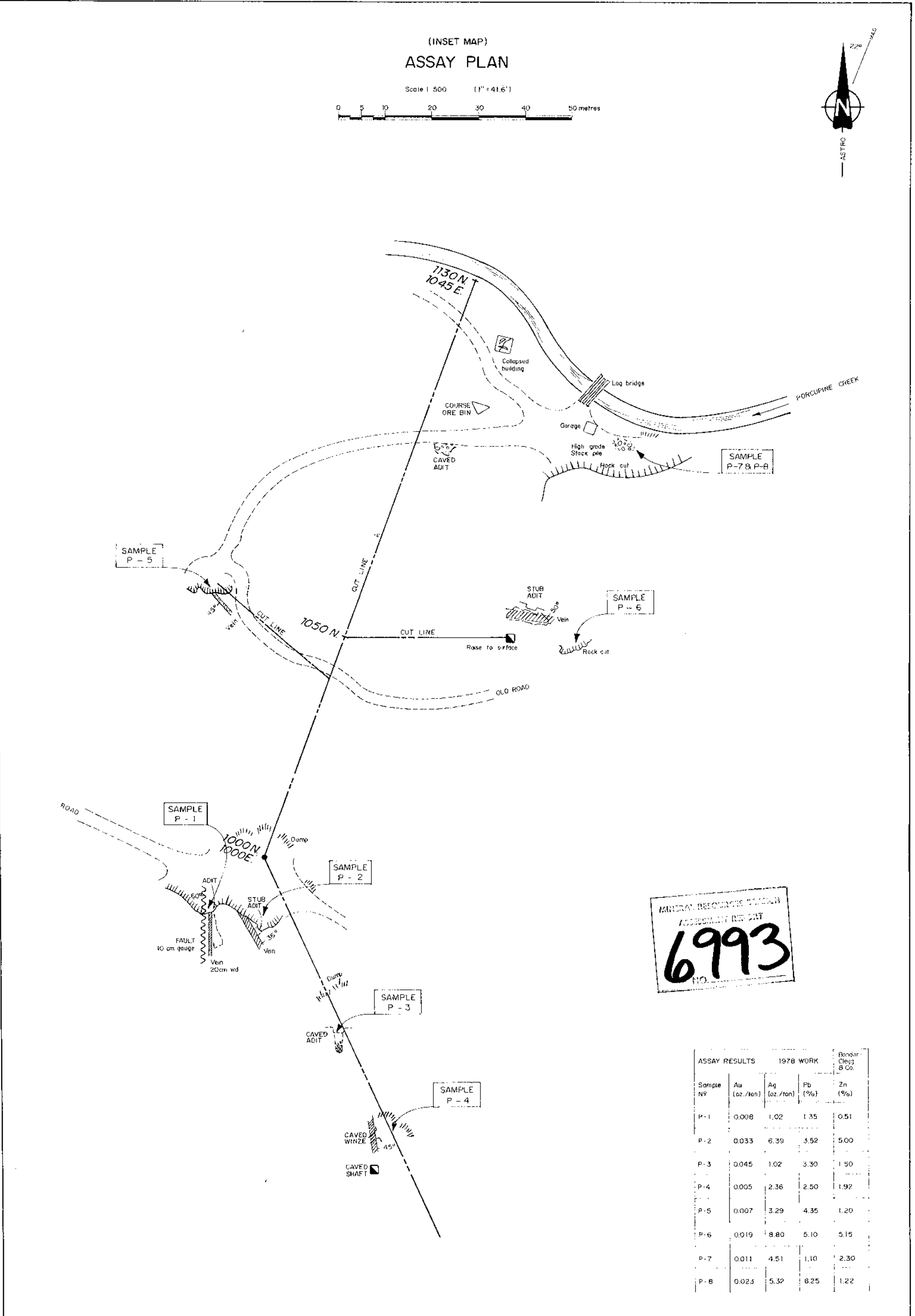
CLAIMS SKETCH
1:2000



NOTES: Claim boundaries approximate
1 hectare = 2.471 acres

(INSET MAP)
ASSAY PLAN

Scale 1:500 (1" = 41.6')

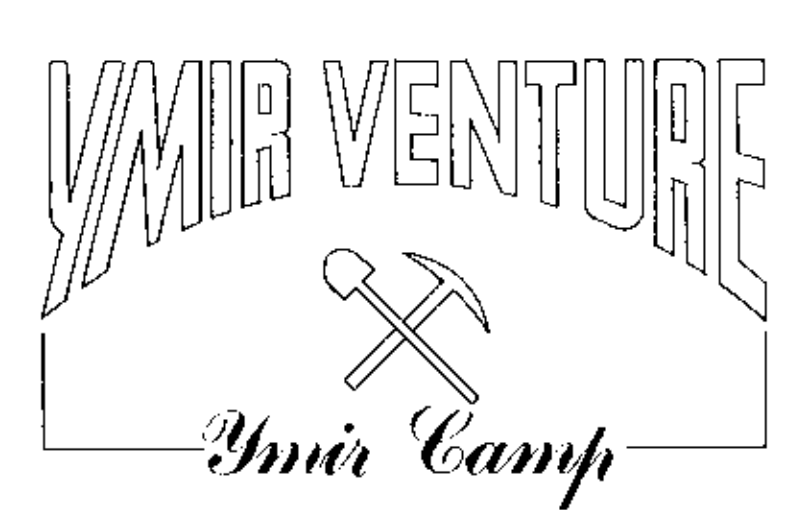


MINERAL RESEARCH TAILOR
PROPERTY NO. 6993

SAMPLE NO	Au (oz./ton)	Ag (oz./ton)	Pb (%)	Zn (%)	Fluorine (oz./ton)
P-1	0.006	1.02	1.35	0.51	
P-2	0.033	6.39	3.52	5.00	
P-3	0.045	1.02	3.30	1.50	
P-4	0.005	2.36	2.50	1.92	
P-5	0.007	3.29	4.35	1.20	
P-6	0.019	8.80	5.10	5.15	
P-7	0.011	4.51	1.10	2.30	
P-8	0.023	5.32	6.25	1.22	

LEGEND

- ROAD
- CREEK
- CUT LINE
- CLAIM LINE
- CLIFF
- VEIN
- DUMP
- SHAFT



Porcupine Group near Ymir, B. C.
Nelson Mining Division 82F/6E.

Scale 1:2000 (1" = 166.6') (Refers to Claims Sketch. See Inset Map for that scale)

Maps from Sketch Maps by D. H. C. August '78
In accompany a report by D. R. COCHRANE, P. Eng. on the PORCUPINE GROUP
dated November 15, 1978. Traced P. K. C. October '78
Heislans Nov/78, B.A.C.

CLAIMS SKETCH & ASSAY PLAN Figure 2